

General / SDWIS Site Visit Info

1	Reason for the visit.	DropDown	None
2	Date of the survey	Date	None
3	Status of site visit.	DropDown	None
4	Source evaluation:	DropDown	None
5	Treatment sytem evaluation:	DropDown	None
6	Distribution system evaluation:	DropDown	None
7	Finished water storage evaluation:	DropDown	None
8	Pump and pumping facility evaluation:	DropDown	None
9	Monitoring and requirements evaluation:	DropDown	None
10	System management and operations evaluation:	DropDown	None
11	Operator compliance with state requirements:	DropDown	None
12	Other element evaluated:	DropDown	None
13	Last name of inspector:	Text	None
14	First name of inspector:	Text	None
15	Inspector organization	Text	None
16	Water system notification date	Date	None
17	Next inspection due date:	Date	None

General / SS Organization**Pre-inspection:**

1	Phone contact with responsible party followed by written notification.	YesNo	None
2	Review of correspondence relative to the system to be inspected?	YesNo	None
3	Review of previous sanitary survey report?	YesNo	None
4	Review of compliance monitoring results and compliance record?	YesNo	None
5	Review of plans / documents on file that are specific to the water system to be inspected.	YesNo	None
6	Organize equipment / materials to be used in the field	Header	None
6.01	Vehicle	YesNo	None
6.02	Data collection equipment / supplies (camera, flashlight, binoculars, mirror)	YesNo	None
6.03	Testing equipment & reagents (CL2 residual, PH, etc.)	YesNo	None
6.04	Personal safety equipment (hardhat, safety shoes, safety glasses, ear plugs)	YesNo	Yes
6.05	Other	Text	None

General / SS Organization**Inspection:**

1	Initial Briefing Date	Date	None
2	Verification / Update of Background data	Date	None
3	Verification / Update of Design data	Date	None
4	Management assessment	Date	None
5	Security Assessment	Date	None
6	Facility walk-thru	Date	None
7	A schematic drawing of the system and, where appropriate, photographs of key system components.	YesNo	None
8	Assimilation of findings	Date	None
9	Debriefing	Date	None

General / SS Organization**Post-inspection:**

1	ID and prioritize sanitary risks	Date	None
2	Determine necessary corrective action	Date	None
3	Complete sanitary survey report	Date	None
4	Notify owner/operator of any variance between the written evaluation and the verbal debriefing or of any draft versions of the report.	Date	None
5	Official notification of appropriate organizations of results	Date	None
6	Follow-up on action taken by the system to eliminate sanitary risks	Date	None

General / Background Info**Name/Location:**

1	Name of public water system:	Text	None
2	PWS number:	Text	None

General / Background Info**Classification:**

1	SDWIS Activity Status	DropDown	None
2	Primary water source?	DropDown	None
3	Total System - Design Water Production / Treatment Capacity (MGD):	Numeric	None
4	Average daily production (MGD)?	Numeric	None
5	Emergency production capacity (MGD):	Numeric	None
6	Gallons per capita per day:	Numeric	None

QuestionNumber		Sanitary Survey Questions --- ESS Comprehensive	Response Type	Correct Response
7	SDWA classification of system		DropDown	None
8	Number of residential service connections:		Numeric	None
9	Residential population:		Numeric	None
10	Purchase water?		YesNoLeadin	None
10.01	If yes, name of system purchased from:		Text	None
10.02	System purchased from - PWS number:		Text	None
11	Date system initially began operating in current configuration:		Date	None
12	Recent modifications?		YesNoLeadin	None
12.01	Recent modifications date		Date	None
12.02	Recent modifications - description		Text	None
13	Seasonal operation - date open:		Date	None
14	Seasonal operation - date closed:		Date	None

General / Background Info

Owner:

1	Owner type:	DropDown	None
2	Legal ownership by (name or entity)	Text	None
3	Principal Executive last name:	Text	None
4	Principal Executive first name:	Text	None
5	Owner's address line1:	Text	None
6	Owner's address line2:	Text	None
7	Owner's address city:	Text	None
8	Owner's address state:	Text	None
9	Owner's address zip code:	Text	None
10	Owner's telephone number	Text	None
11	Owner's email address	Text	None

General / Background Info

Staff:

1	System manager's last name	Text	None
2	System manager's first name	Text	None
3	System manager's address	Text	None
4	System manager's city	Text	None
5	System manager's telephone - day	Text	None

QuestionNumber		Sanitary Survey Questions --- ESS Comprehensive	Response Type	Correct Response
6	System manager's email address		Text	None
7	Main operator's last name		Text	None
8	Main operator's first name		Text	None
9	Main operator's address		Text	None
10	Main operator's telephone		Text	None
11	Main operator's email address		Text	None
12	Main Operator's Certification Level		Text	None
13	Certificate ID Number		Text	None
14	Date Issued		Date	None
15	Date Expires		Date	None
16	List all certified operators:		Text	None
17	Emergency contacts: Day - name		Text	None
18	Emergency contacts: Day - telephone number		Text	None
19	Emergency contacts: Night - name		Text	None
20	Emergency contacts: Night - telephone number		Text	None

General / Background Info

Previous Survey Info:

1	Date of last sanitary survey:	Date	None
2	Last survey conducted by	Header	None
2.01	Name	Text	None
2.02	Organization	Text	None
2.03	Phone:	Text	None
2.04	e-mail	Text	None
3	List of deficiencies from previous survey	Header	None
3.01	Have all deficiencies noted during the previous survey been corrected?	YesNo	Yes
3.02	If no, list item numbers for remaining deficiencies.	Text	None

General / Background Info

Current Survey Info / History:

1	Have there been any violations in the past year?	YesNo	No
1.01	If yes, list violations	Text	None
2	Have there been any interruptions in service during the past year?	YesNo	No

General / Background Info**Current Survey Info / Participants:**

1	Current Survey Date:	Date	None
2	Survey performed by:	Header	None
2.01	Name	Text	None
2.02	Title	Text	None
2.03	Organization	Text	None
3	Water system representatives present during the survey:	Header	None
3.01	Name #1:	Text	None
3.02	Title #1:	Text	None
3.03	Name #2:	Text	None
3.04	Title #2:	Text	None
3.05	Name #3:	Text	None
3.06	Title #3:	Text	None

General / Background Info**Current Survey Info / Sampling:**

1	1	Samples taken at the time of survey by inspector?	YesNoLeadin	None
1.01		If yes, what?	Text	None

Regulations / General

1	1	Is the system in compliance with various provisions of the National Primary Drinking Water Regulations (NPDWR)?	YesNo	Yes
2	1	What is the operator certification level required for this facility ?	Text	None
3	1	Is the system staffed by properly certified operators?	YesNo	Yes
4	1	Has the system made modifications to its source, treatment process, chemicals used or distribution system without state approval?	YesNo	No

Regulations / Plans/Records

1	1	Is a total coliform rule (TCR) sample siting plan available for review?	YesNoLeadin	Yes
1.01	1	Does the (TCR) sample siting plan meet the minimum requirements?	YesNo	Yes
2	1	Are the following records maintained and available for review:	Header	None
2.01	1	Bacteriological Analysis - 5 years retention.	YesNo	Yes
2.02	1	Chemical Analysis - 10 years retention.	YesNo	Yes

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
2.03	1	Records of actions taken to correct violations - 3 years retention.	YesNo	Yes
2.04	1	Copies of reports, summaries or communication related to Sanitary Surveys - 10 years retention.	YesNo	Yes
2.05	1	Copies of reports, summaries or communication related to reports concerning variances or exemptions - 5 years retention.	YesNo	Yes
2.06	1	Copies of reports, summaries or communication related to copies of public notices issued - 3 years retention.	YesNo	Yes

Regulations / Monitoring

1	1	Is the current information in state files accurate for population served and number of services?	YesNo	Yes
2	1	Is the current information on the status of the system correct, i.e. large enough to be a PWS, type of system, i.e. CWS, NCWS, NTNCWS.	YesNo	Yes
3	1	Has the Department reduced the total coliform monitoring frequency?	YesNo	None
4	2	Are laboratory facilities available at the plant to enable staff to perform appropriate process control testing?	YesNo	Yes
5	1	Are certified laboratories utilized when required?	YesNo	Yes
6	2	Are records of the monitoring program maintained according to applicable regulations?	YesNo	Yes
7	1	Is the PWS out of compliance with any monitoring requirements?	YesNoLeadIn	No
7.01		If yes, identify the nature of the non-compliance.	Text	None
8	1	Has the PWS been in compliance with all monitoring requirements for the past 24 months?	YesNo	Yes
9		Have samples for the following parameters been accomplished according to the applicable schedule?	Header	None
9.01	1	Coliform	YesNo	Yes
9.02	1	IOCs	YesNo	Yes
9.03	1	Nitrates	YesNo	Yes
9.04	1	Radionuclide	YesNo	Yes
9.05	1	VOCs	YesNo	Yes
9.06	1	SOCs	YesNo	Yes
9.07	1	DBP's	YesNo	Yes
9.08	1	If no, explain.	Text	None
10	1	Is the PWS in compliance with the terms of its current waiver from monitoring for any of the following:	Header	None
10.01	1	IOCs	YesNo	Yes
10.02	1	Asbestos	YesNo	Yes
10.03	1	Cyanide	YesNo	Yes
10.04	1	VOCs	YesNo	Yes
10.05	1	SOCs	YesNo	Yes
10.06	1	Dioxins	YesNo	Yes

Regulations / Enforcement

1	1	Has the PWS been issued a warning letter by the State within the last 24 months?	YesNo	No
2	1	Has the PWS been issued an NOV?	YesNo	No
3	1	Has PWS been on the Significant Non-Compliers "SNC" list within the last 24 months?	YesNoLeadin	No
3.01	1	If SNC, what has the PWS done to achieve compliance?	Text	None
4	1	Is the PWS currently under a consent order?	YesNo	No
5	1	Is the PWS currently under the terms of a court order regarding the operation of the drinking water system?	YesNo	No
6	1	Is the system complying with conditions set forth in any variances, exemptions or orders?	YesNo	Yes

Sources / General**General:**

1	2	If water withdrawal permits are required, is the facility operating within the limits?	YesNo	Yes
2	2	Does the system have redundant sources?	YesNo	Yes
3	4	Is a manifold used to combine sources?	YesNo	Yes
4	3	Are there any abandoned, unused, or auxiliary sources?	YesNo	No
5	2	Has there been a Source Water Assessment conducted for the system?	YesNoLeadin	Yes
5.01		If yes, date conducted:	Date	None

Sources / General**Monitoring:**

1	2	Does the system monitor raw water quality?	YesNo	Yes
2	3	Does the raw water quality monitoring indicated that the water is free from contamination?	YesNo	Yes
3	3	Is the system utilizing the highest quality source available?	YesNo	Yes
4	2	Is there a trend of decreasing raw water quality that would suggest the need for a new source or changes in treatment in the future?	YesNo	No

Sources / General**Quantity:**

1		What is the total design production capacity for all sources?	Numeric	None
2		What is the present average daily production for all sources?	Numeric	None
3		What is the maximum daily production for all sources?	Numeric	None
4	2	Is the safe yield sufficient to meet current and future demands?	YesNo	Yes
5	3	Does system have an operational master meter?	YesNo	Yes
6		How many service connections does the system serve?	Numeric	None

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
7	4	Are all service connections metered?	YesNo	Yes
8	2	Does the system have interconnections with neighboring systems or a contingency plan for water outages?	YesNo	Yes

Sources / Groundwater

Wells / General:

1	4	Does the system have well construction log(s) on file?	YesNo	Yes
2	3	Is drawdown measured?	YesNo	Yes
3	3	Is the source located in a well house?	YesNo	None
4		Is a proper sample tap provided?	YesNo	None
5		Capacity of the Well:	Text	None
6		Latitude decimal measure:	Text	None
7		Longitude decimal measure:	Text	None
8		Has a GWUDI Assessment been done for this source?	YesNoLeadin	None
8.01		If yes, Date of Assessment?	Date	None
9		Has the source been determined to be under the influence of a surface water source?	YesNo	None
10		Are There any Recent Modifications?	YesNoLeadin	None
10.01		If yes, Date of Recent Modifications?	Date	None
10.02		Text of Recent Modifications:	Text	None

Sources / Groundwater

Wells / Security:

1	2	Is the wellhead protected from access by unauthorized personnel?	YesNo	Yes
2	3	Is lightning protection provided?	YesNo	Yes

Sources / Groundwater

Wells / SW Protection:

1		Is the well in a confined or unconfined aquifer?	DropDown	None
2	3	Is there a Source Water Protection Plan developed for this source?	YesNoLeadin	Yes
2.01		If yes, date of the plan:	Date	None
3	2	Is the well located in the proximity of any potential sources of pollution?	YesNo	No
4	2	Is the watershed or aquifer recharge area protected?	YesNo	Yes
5		What is the size of the owned/protected area in acres?	Numeric	None
6		What is the nature of the protection area?	DropDown	None
7	2	Is the area adequately controlled?	YesNo	Yes
8	4	Has a land survey been conducted?	YesNo	Yes

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
9	2	Are the following minimum distances from the PWS well being met?	Header	None
9.01	2	Any potential source of contamination within 50 Ft.	YesNo	No
9.02	2	Sewer line within 100 Ft.	YesNo	No
9.03	2	Individual home septic tank within 100 Ft.	YesNo	No
9.04	2	Individual home disposal field within 100 Ft.	YesNo	No
9.05	2	Individual home seepage pit within 100 Ft.	YesNo	No
9.06	2	Privies within 100 Ft.	YesNo	No
9.07	2	Livestock within 100 Ft.	YesNo	No
9.08	2	Canals, streams, ditches, lakes, ponds and tanks used to store nonpotable substances within 50 Ft.	YesNo	No
10	2	Are there abandoned wells that have not been properly plugged and sealed?	YesNo	No
11	2	Are pesticides, herbicides, fertilizers, petroleum products, and other toxic or hazardous materials stored off of the well lot?	YesNo	Yes
12	2	Are procedures in place to prohibit the application of pesticides, herbicides, and fertilizers to the well lot?	YesNo	Yes
13	2	Is the upper termination of the well protected?	YesNo	Yes
14	2	Is the well cased and sealed in such a manner that surface water cannot enter the well?	YesNo	Yes
15	2	Is the well house protected from flooding and does it have adequate drainage?	YesNo	Yes
16	3	Is the floor drain connected to sewer, storm drains, chlorination room drains, or any other source of contamination?	YesNo	No
18	2	Is the well house kept clean, in good repair and not used to store toxic or hazardous material?	YesNo	Yes
19	3	Is the sump for well house floor drains located at least 30 feet from the well?	YesNo	Yes

Sources / Groundwater

Wells / Construction:

1		What is the depth of the well in feet?	Numeric	None
2		What is the depth of the casing in feet?	Numeric	None
3		What is the depth of grouting in feet?	Numeric	None
4	2	Does the casing extend a minimum of 12 inches above the finished ground surface or 6 inches above the well house floor?	YesNo	Yes
5	3	Is grouting or a concrete pad surrounding the casing at the well?	YesNo	Yes
6		What type of pump is used for this well?	DropDown	None
7	2	Is the sanitary seal properly installed and maintained?	YesNo	Yes
8	2	Is the well vented with the open end of the vent screened and terminated downward at least 12 inches above the ground or pumphouse floor?	YesNo	Yes
9	3	If the well has a pitless adapter or pitless unit, is it third party approved?	YesNo	Yes
10	2	Is the pitless adapter designed, constructed and installed to be water tight including the cap, cover, casing extension and other attachments?	YesNo	Yes
11	3	Is there any history of caving or sand problems?	YesNo	No
12	3	Is a screen and/or gravel pack provided where fine grain sands are present in the source of water aquifer?	YesNo	Yes

13 2 Is the discharge line from the well equipped to allow the well to be pumped to waste via an approved air gap?

YesNo Yes

Sources / Groundwater

Springs / General:

1 What conditions cause changes to the quality of the water?

Text None

2 2 Is a proper sample tap provided?

YesNo Yes

3 3 Is a flow meter or other flow measuring device provided?

YesNo Yes

Sources / Groundwater

Springs / SW Protection:

1 2 Is the watershed or aquifer recharge area protected?

YesNo Yes

2 What is the size of the owned/protected area in acres?

Numeric None

3 What is the nature of the protection area?

DropDown None

4 2 Is the area adequately controlled?

YesNo Yes

5 4 Has a land survey been conducted?

YesNo Yes

6 Has a GWUDI Assessment been done for this source?

YesNoLeadin Yes

6.01 If yes, date performed?

Date None

7 2 Is the spring housed in a permanent structure and protected from contamination including the entry of surface water, animals and dust?

YesNo Yes

8 2 Is the site subject to flooding?

YesNo No

9 2 Is the entire area within 100 feet of the spring owned by the supplier or controlled by a long term lease?

YesNo Yes

10 2 Is the entire area within 100 feet of the spring fenced to prevent access by livestock and void of buildings, dwellings and sources of contamination?

YesNo Yes

11 2 Is surface water and drainage ditches diverted from the 100 feet protection zone around the spring?

YesNo Yes

Sources / Groundwater

Springs / Construction:

1 2 Is the supply intake located above the floor of the collection chamber and screened?

YesNo Yes

2 2 Is there a screened overflow and drain pipe?

YesNo Yes

Sources / Surface Water

Infiltration Galleries / Construction:

1 2 Is there a lid over the gallery?

YesNo Yes

2 2 Is the lid watertight and locked?

YesNo Yes

3 3 Is the collector in sound condition and maintained as necessary?

YesNo Yes

Sources / Surface Water**Reservoirs, Lakes, Rivers, Streams / General:**

1	3	Are multiple intakes located at different levels?	YesNoLeadin	Yes
1.01	3	Are they utilized?	YesNo	Yes
2	3	Is the highest quality water being drawn?	YesNo	Yes
3		What conditions cause fluctuations in water quality?	Text	None
4		Is there any treatment provided in the reservoir?	YesNoLeadin	None
4.01		If yes, describe.	Text	None
5	3	Has the dam been inspected for safety (if applicable)?	YesNo	Yes

Sources / Surface Water**Reservoirs, Lakes, Rivers, Streams / SW Protection:**

1	2	Is the area around the intake(s) free from potential sources of pollution?	YesNo	Yes
2	3	Is the area around the intake restricted for a radius of 200 feet?	YesNo	Yes
3		How often are intakes inspected?	DropDown	None
4	2	Is the watershed or aquifer recharge area protected?	YesNo	Yes
5		What is the size of the owned/protected area in acres?	Numeric	None
6		What is the nature of the protection area?	DropDown	None
7	2	Is the area adequately controlled?	YesNo	Yes
8	4	Has a land survey been conducted?	YesNo	Yes

Sources / Surface Water**Roof Catchments / General:**

1		What conditions cause changes to quality of the water?	Text	None
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Sources / Surface Water**Roof Catchments / Construction:**

1	2	Is the roof in good condition?	YesNo	Yes
2	2	Is there a diversion box?	YesNo	Yes
3	2	Is the gutter system in good condition?	YesNo	Yes
4	2	Is the collection chamber properly designed and constructed?	YesNo	Yes
5	2	Is the access cover a shoe-box type lid?	YesNo	Yes
6	2	Is the vent screened?	YesNo	Yes
7	2	Does the outlet pick-up several inches above to prevent passage of sediment?	YesNo	Yes

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
8	2	Is the drain / overflow screened?	YesNo	Yes
9	2	Is the supply intake adequate?	YesNo	Yes

Treatment / General

General:

1	3	Is a schematic of the treatment facility readily available and up to date?	YesNo	Yes
2	2	Are there at least two parallel units for each critical treatment process?	YesNo	Yes
3	2	Is a finished water sampling tap provided?	YesNo	Yes
4	3	Is the facility performing adequate process control testing consistent with the specific treatment process?	YesNo	Yes
5	3	Is there any recycling being performed from waste stream?	YesNoLeadin	None
5.01	2	If yes, where does the recycle water enter the treatment plant?	Text	None
6	2	For all surface water plants that serve a population greater than 3300, do they have equipment to measure chlorine residuals continuously entering the distribution system?	YesNo	Yes
7	3	At plants treating surface water, are provisions made for applying chlorine to the raw water, settled water, filtered water, and water entering the distribution system?	YesNo	Yes
8	2	Are pre- and post-chlorination systems, for all facilities treating surface water, independent to prevent possible siphoning of raw or partially treated water into the clear well?	YesNo	Yes
9	2	Is the disinfectant contact time, "T," determined each day during peak hourly flow?	YesNo	Yes
10	2	Is there at least a trace free chlorine residual at distant points in the water distribution system.	YesNo	Yes

Treatment / General

Safety:

1	4	Are permanent ladders or handholds provided on the inside walls of basins above the water level?	YesNo	Yes
2	3	Does the PWS provide stairways, ladders and handrails where needed?	YesNo	Yes
3	4	Are treads of non-slip material provided where needed?	YesNo	Yes
4	3	Is ventilation provided in all rooms, compartments, pits and other enclosures where unsafe atmosphere may develop or where excessive heat may be?	YesNo	Yes
5	3	Are all confined space entry procedures done in accordance with OSHA requirements?	YesNo	Yes

Treatment / General

Chemical Use:

1	3	Have operators been trained to use the safety equipment?	YesNo	Yes
2	3	Is there a Hazard Communication Program in place?	YesNo	Yes
3	3	Are safe practices followed during chemical handling and mixing?	YesNo	Yes
4	4	Are floor surfaces smooth and impervious, slip-proof and well drained ?	YesNo	Yes
5	2	Do the operators know where all of the chemical application points are and which points are being utilized?	YesNo	Yes

Sanitary Survey Questions --- ESS Comprehensive

6	3	Is a deluge shower and/or eyewashing device installed where strong acids and alkalis are used or stored?	YesNo	Yes
7	3	Are all materials that are in contact with chemicals resistant to the aggressiveness of that particular chemical?	YesNo	Yes
	4	Are carts, elevators and other appropriate means provided for lifting chemical containers to minimize excessive lifting by operators?	YesNo	Yes
8	2	Are all chemicals and water contact materials approved by an ANSI accredited organization?	YesNo	Yes
9	2	Are incompatible chemicals stored separately?	YesNo	Yes
10	3	Are chemical feeders and pumps operated at no lower than 20 percent of the feed range?	YesNo	Yes
11	2	Is an anti-siphon device provided so that liquid chemical solutions cannot be siphoned through solution feeders into the water supply?	YesNo	Yes
12	2	Are tanks and tank refilling line entry points properly labeled to designate the correct chemical ?	YesNo	Yes
13	4	Do large chemical storage tanks with access openings have "shoebox" type hatches?	YesNo	Yes
14	3	Are chemicals stored in covered or unopened shipping containers? (unless the chemical is transferred into an approved storage unit)	YesNo	Yes
15	3	Are instrumentation and controls for each chemical use process adequate, operational, and utilized?	YesNo	Yes
16	3	Are vents from feeders, storage facilities and equipment exhaust discharged to the outside atmosphere above grade and remote from air intakes?	YesNo	Yes
17	2	Are acids and caustics kept in closed corrosion-resistant shipping containers or storage units?	YesNo	Yes
18	2	Do daily operating records reflect chemical dosages and total quantities used?	YesNo	Yes
19	3	Is there at least a 30 days supply of each chemical maintained at all times?	YesNo	Yes
20	2	Are provisions made for measuring the quantities of chemicals used?	YesNo	Yes
21	2	Are chemical shipping containers labeled to include chemical name, purity and concentration, supplier name and address?	YesNo	Yes
22	3	Are delivered chemicals assayed?	YesNo	Yes
23	2	Is there adequate space in the facility for storage of all chemicals required in the treatment process?	YesNo	Yes
24	4	Are the chemical storage areas clean and as dry as possible?	YesNo	Yes
25	3	Are there adequate laboratory facilities provided consistent with the monitoring requirements of the treatment process?	YesNo	Yes
26	3	Is there appropriate safety equipment (e.g. cartridge respirator for calcium hypochlorite) and PPE (e.g. goggles, gloves, etc.) available and in use?	YesNo	Yes
27	4	Is the chemical feed equipment conveniently located near points of application to minimize length of feed lines?	YesNo	Yes
28		Are liquid chemicals used?	YesNoLeadin	None
28.01	2	Is cross-connection control provided on the service water lines that discharge to the solution tanks?	YesNo	Yes
28.02	2	Is cross-connection control provided so that no direct connections exist between any sewer and a drain or overflow from the feeder, solution chamber or tank?	YesNo	Yes
28.03	2	Are hose-bibs provided with backflow prevention devices?	YesNo	Yes
28.04	2	Is all chemical feed equipment operable and in good condition?	YesNo	Yes
28.05	2	Is there a minimum of two feeders provided for each critical chemical feed application?	YesNo	Yes
28.06	3	Are spare parts available for all chemical feeders?	YesNo	Yes
28.07	2	Are all chemical feeders properly calibrated to ensure accurate feed rates?	YesNo	Yes
28.08	3	Is the output of each chemical feed pump adequate to supply the required dose rate?	YesNo	Yes

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
28.09	3	Is the solution tank covered to minimize corrosive vapors?	YesNo	Yes
28.1	4	Are the feeders manually or automatically controlled?	DropDown	None
28.11	2	If the system uses automatically operated facilities, are the chemical feeders electrically interconnected with the well or water supply pump?	YesNo	Yes
28.12	4	Can chemical feed lines be cleaned or flushed?	YesNo	Yes
28.13	3	If a motor-driven transfer pump is provided, is a liquid level limit switch and an over-flow from the day tank provided?	YesNo	Yes
28.14	3	Are the chemical feeders flow paced?	YesNo	Yes
28.15	3	Are all chemicals conducted from the feeder to the point of application in separate conduits?	YesNo	Yes
28.16	3	Are the chemical feed pumps sized to match or exceed maximum head conditions found at the point of injection?	YesNo	Yes
28.17	2	Is there proper anti-siphon protection on each feed pump?	YesNo	Yes
28.18	3	Is there a procedure in place to ensure consistent strength of the chemical in the day tank?	YesNo	Yes
28.19	4	Are feed lines color coded according to accepted standards?	YesNo	Yes
28.2	2	Do subsurface locations for solution tanks have positive drainage for groundwater, accumulated water, chemical spills and overflows?	YesNo	Yes
28.21	3	Are feed lines protected against freezing?	YesNo	Yes
28.22	4	Are feed lines made of durable, corrosion-resistant material?	YesNo	Yes
28.23	2	Are storage tanks and pipelines for liquid chemicals specified for use with individual chemicals and not used for different chemicals?	YesNo	Yes
28.24	3	Are feed lines easily accessible throughout the entire length?	YesNo	Yes
28.25	3	Is a means provided to measure the solution level in the day tank or storage tank?	YesNo	Yes
28.26	3	Is the chemical feed equipment readily accessible for servicing, repair, and observation of operation?	YesNo	Yes
28.27	3	Do the day tanks hold at least a 30 hour supply of chemical solution?	YesNo	Yes
28.28	4	Are day tanks provided where bulk storage of liquid chemical is utilized?	YesNo	Yes
29		Are dry chemicals used?	YesNoLeadIn	None
29.01	4	Does the dry chemical feeder measure the quantity of chemical fed volumetrically or gravimetrically?	DropDown	None
29.02	3	Does the dry chemical feeder provide adequate solution water and agitation of the chemical in the solution pot?	YesNo	Yes
29.03	4	Does the dry chemical feeder provide gravity feed from the solution pots?	YesNo	None
29.04	3	Are provisions made for the proper transfer of dry chemicals from shipping containers to storage bins or hoppers, in such a way as to minimize the quantity of dust which may enter the room in which the equipment is installed?	YesNo	Yes
29.05	3	Does the dry chemical feeder completely enclose chemicals to prevent emission of dust?	YesNo	Yes
29.06	3	Is the chemical feed equipment located in a separate room to reduce hazards and dust problems?	YesNo	Yes
29.07	3	Are provisions made for disposing of empty bags, drums or barrels by an approved procedure which will minimize exposure to dusts?	YesNo	Yes

Treatment / General

Lab/Monitoring:

1	2	Are appropriate testing facilities provided consistent with proper monitoring of the specific treatment process?	YesNo	Yes
2	3	Are testing facilities orderly and well maintained?	YesNo	Yes

3	2	Do all chemical reagents have an unexpired shelf life?	YesNo	Yes
4	2	Does system have a sufficient supply of approved sampling bottles properly stored?	YesNo	Yes

Treatment / General**Cross-Connections:**

1		Are cross-connections present at the water treatment plant?	YesNo	None
2	3	Are backflow preventers installed with isolation valves to facilitate removal and maintenance?	YesNo	Yes
3	2	Are any RPZ devices installed in a pit?	YesNo	No
4	2	Are RPZ drains provided with a suitable air gap?	YesNo	Yes

Treatment / Activated Carbon**Granular:**

1	3	Are granular activated carbon (GAC) filters used for removal of organic material that may be available as DBP precursors?	YesNoLeadin	Yes
1.01	3	If yes, what is the depth of the GAC media in feet?	Numeric	None
2	3	What is the empty bed contact time (EBCT)?	Text	None
3	3	Is backwashing assisted by an air scour system?	YesNo	Yes
4	3	What is the frequency of GAC regeneration?	Text	None
5	2	What are filter effluent quality goals?	Text	None
6	3	What type of filtration media system is being utilized?	DropDown	None
7	3	What is the average and maximum filtration rate utilized throughout the year?	Text	None
8	3	Are media depths periodically checked against design standards?	YesNo	Yes
9	3	Are the filters evaluated regularly to determine condition of media?	YesNo	Yes
10	2	What are typical filter run times?	Text	None
11	3	Are filter run times consistent throughout the year?	YesNo	Yes
12	2	What criteria is used to determine when a filter backwash is required?	DropDown	None
13	2	Is there an SOP for the backwash procedure?	YesNo	Yes
14	3	What is the minimum and maximum backwash rate used?	Text	None
15	3	Are the filters equipped with a surface wash or air scour system to enhance the efficiency of the backwash process?	DropDown	Yes
16	2	Is filter-to-waste practiced at the end of a backwash?	YesNo	Yes
17	3	Is there at least a 30 days supply of each Activated Carbon maintained at all times?	YesNo	Yes
18	2	Are provisions made for measuring the quantities of chemicals used?	YesNo	Yes
19	4	Can chemical feed lines be cleaned or flushed?	YesNo	Yes
20	2	Are chemical shipping containers labeled to include chemical name, purity and concentration, supplier name and address?	YesNo	Yes
21	3	Are delivered chemicals assayed?	YesNo	Yes

Treatment / Activated Carbon**Powdered:**

1	3	What is the empty bed contact time (EBCT)?	Text	None
2	3	Is backwashing assisted by an air scour system?	YesNo	Yes
3	2	What are filter effluent quality goals?	Text	None
4	3	What type of filtration media system is being utilized?	DropDown	None
5	3	What is the average and maximum filtration rate utilized throughout the year?	Text	None
6	3	Are media depths periodically checked against design standards?	YesNo	Yes
7	3	Are the filters evaluated regularly to determine condition of media?	YesNo	Yes
8	2	What are typical filter run times?	Text	None
9	3	Are filter run times consistent throughout the year?	YesNo	Yes
10	2	What criteria is used to determine when a filter backwash is required?	DropDown	None
11	2	Is there an SOP for the backwash procedure?	YesNo	Yes
12	3	What is the minimum and maximum backwash rate used?	Text	None
13	3	Are the filters equipped with a surface wash or air scour system to enhance the efficiency of the backwash process?	DropDown	Yes
14	2	Is filter-to-waste practiced at the end of a backwash?	YesNo	Yes
15	3	Is there at least a 30 days supply of each Activated Carbon maintained at all times?	YesNo	Yes
16	2	Are provisions made for measuring the quantities of chemicals used?	YesNo	Yes
17	4	Can chemical feed lines be cleaned or flushed?	YesNo	Yes
18	2	Are chemical shipping containers labeled to include chemical name, purity and concentration, supplier name and address?	YesNo	Yes
19	3	Are delivered chemicals assayed?	YesNo	Yes
20	3	Is PAC added as early as possible in the treatment process to provide maximum contact time?	YesNo	Yes
21	3	Is the PAC added by a dry-feed machine?	YesNoLeadin	None
21.01	3	If yes, is the PAC properly wetted?	YesNo	Yes
22	3	Is the PAC applied before the application point of chlorine or any or other oxidant?	YesNo	Yes
23	3	Are provisions made for adding from 0.1 milligrams per liter to at least 40 milligrams per liter of PAC? (The required rate of feed of carbon in a water treatment plant depends upon the tastes and/or odors involved.)	YesNo	Yes
24	4	Is the addition of PAC provided at several points in the system?	YesNo	Yes
25	3	Is a separate room provided for PAC feed installations and equipped with explosion-proof electrical outlets, lights and motors?	YesNo	Yes
26	3	Is the PAC stored in a room separate from any other chemicals?	YesNo	Yes
27	4	Are provisions made for adequate dust control?	YesNo	Yes
28	2	Is PAC being handled as a potentially combustible material and stored in a building or compartment as nearly fireproof as possible?	YesNo	Yes

Treatment / Aeration**General:**

1	3	Is the aerator free of significant corrosion?	YesNo	Yes
2	4	Is the aerator taken out of service periodically for maintenance and cleaning?	YesNo	Yes

Treatment / Chlorination**General:**

1		Is chlorination used for disinfection?	YesNoLeadin	None
1.01	3	Does the system use automation, adjusting with flow and/or chlorine residual analyzer to automatically adjust feed rates?	DropDown	None
1.02	2	Are automatic chlorine residual recorders provided where the chlorine demand varies appreciably over a short period of time?	YesNo	Yes
1.03	2	Is there standby chlorination equipment of sufficient capacity available to replace the largest unit?	YesNo	Yes
1.04	2	Is there an alarm tied to interruptions in the chlorine feed?	YesNo	Yes
1.05	3	Is the chlorinator capacity such that a free chlorine residual of at least 2 milligrams per liter can be maintained in the water after contact time of at least 30 minutes when maximum flow rate coincides with anticipated maximum chlorine de	YesNo	Yes
1.06	3	Is the pH of the water monitored at least once per day at each chlorine residual sampling point?	YesNo	Yes
1.07	2	During the past year, has the disinfection process operated uninterrupted while water was being produced?	YesNo	Yes
1.08	2	Is chlorine residual testing equipment (recognized in the latest edition of Standard Methods) provided and is it capable of measuring residuals to the nearest 0.1 milligrams per liter?	YesNo	Yes
1.09	2	Does the PWS use the DPD method that utilizes the digital readout with a self-contained light source?	YesNo	Yes
2		Is on-site chlorination used?	YesNoLeadin	None
2.01	3	Does the on-site chlorine generation system off gas to the outdoors?	YesNo	Yes
2.02	2	Is the salt being used for on-site chlorine generation approved by an ANSI accredited organization?	YesNo	Yes
3		Is chlorination used for the removal of objectionable tastes and odors?	YesNoLeadin	None
3.01		Is the treatment designed so that the products of the reaction are not visible in the finished water?	YesNo	Yes
3.02		Is adequate contact time provided to complete the chemical reactions involved?	YesNo	Yes
3.03		Is filter backwash water recycled when the finished water has taste and odor problems?	YesNo	No

Treatment / Chlorination**Chlorine Dioxide:**

1	2	Have provisions been made for proper storage and handling of sodium chlorite to eliminate any danger of fire or explosion associated with its powerful oxidizing nature?	YesNo	Yes
2	3	Is sodium chlorite stored by itself in a separate room and preferably stored in an outside building detached from the water treatment facility?	YesNo	Yes
3	3	Is the storage structures constructed of noncombustible materials?	YesNo	Yes
4	3	If the storage structure must be located in an area where a fire may occur, is water available to keep the sodium chlorite area cool enough to prevent heat induced explosive decomposition of chlorite?	YesNo	Yes

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
5	3	Are positive displacement feeders provided?	YesNo	Yes
6	3	Is the tubing for conveying sodium chlorite or chlorine dioxide solutions of the Type 1 PVC, polyethylene or materials recommended by the manufacturer?	YesNo	Yes
7	3	Are feed lines installed in a manner to prevent formation of gas pockets and do they terminate at a point of positive pressure?	YesNo	Yes
8	3	Are check valves provided to prevent the backflow of chlorine into the sodium chlorite line?	YesNo	Yes
9	3	Are storage drums thoroughly flushed prior to recycling or disposal?	YesNo	Yes
10	2	Is there an automatic switch-over of chlorine cylinders provided to assure continuous disinfection?	YesNo	Yes
11	2	Is a weight scale provided for weighing chlorine gas cylinders / containers?	YesNo	Yes
12	3	Is the weight scale capable of providing reasonable precision in relation to average daily dose?	YesNo	Yes
13	3	Are the pipes carrying elemental liquid or dry gaseous chlorine under pressure made of Schedule 80 seamless steel tubing or other materials recommended by the Chlorine Institute (never use PVC)?	YesNo	Yes
14	3	Does the water supply to each eductor have a separate shut-off valve?	YesNo	Yes
15	3	Are gauges for measuring water pressure and vacuum at the inlet and outlet of each eductor provided?	YesNo	Yes
16	3	Is the chlorine solution injector/diffuser compatible with the point of application to provide a rapid and thorough mix with all the water being treated?	YesNo	Yes
18	3	Is rubber, PVC, polyethylene, or other materials recommended by the Chlorine Institute used for chlorine solution piping and fittings?	YesNo	Yes
19	2	Are there any cross-connections in the chlorine feed makeup water or injection points?	YesNo	No
20	2	Is there a chlorine leak detector properly located for monitoring any leaks?	YesNo	Yes
	3	Are safe practices followed during cylinder changes and maintenance?	YesNo	Yes
21	2	Is continuous chlorine leak detection equipment provided?	YesNo	Yes
22	2	Where a leak detector is provided, is it equipped with both an audible alarm and a warning light?	YesNo	Yes
23	3	Is there an appropriate leak repair kit approved by the Chlorine Institute provided?	YesNo	Yes
24	2	Is respiratory protection equipment, meeting the requirements of the National Institute for Occupational Safety and Health (NIOSH) available where chlorine gas is handled, and is it stored at a convenient location, but not inside any room where chlorine i	YesNo	Yes
25	3	Are cylinders and gas lines protected from temperatures above that of the feed equipment?	YesNo	Yes
26	3	Do pressurized chlorine feed lines carry chlorine gas beyond the chlorinator room?	YesNo	No
27	3	Is a scrubber provided to chemically neutralize chlorine gas before discharge from the water treatment plant building into the air?	YesNo	Yes
28	3	Is such equipment designed as part of the chlorine gas storage and feed areas to automatically engage in the event of any measured chlorine release?	YesNo	Yes
29	3	Is the equipment sized to treat the entire contents of the largest storage container on site?	YesNo	Yes
30	3	Is chlorine gas feed and storage enclosed and separated from other operating areas?	YesNo	Yes
31	3	Are the chlorinator rooms heated to 60 degrees F, and protected from excessive heat?	YesNo	Yes
32	4	Is the chlorine room provided with a shatter resistant inspection window installed in an interior wall?	YesNo	Yes
33	3	Is the chlorine room constructed in such a manner that all openings between the chlorine room and the remainder of the plant are sealed?	YesNo	Yes
34	3	Is the chlorine room provided with doors equipped with panic hardware, assuring ready means of exit and opening outward only to the building exterior?	YesNo	Yes

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
35	4	Where chlorine gas is used, does each room have a ventilating fan with a capacity that provides one complete air change per minute when the room is occupied?	YesNo	Yes
36	4	Where chlorine gas is used, does the ventilating fan take suction near the floor as far as practical from the door and air inlet, with the point of discharge so located as not to contaminate air inlets to any rooms or structures?	YesNo	Yes
37	4	Where chlorine gas is used, are all air inlets located near the ceiling and fitted with louvers?	YesNo	Yes
38	3	Where chlorine gas is used, do louvers for chlorine room air intake and exhaust facilitate airtight closure?	YesNo	Yes
39	3	Where chlorine gas is used, are there separate switches for the fan and lights located outside of the chlorine room and at the inspection window?	YesNo	Yes
40	3	Are outside switches protected from vandalism?	YesNo	Yes
41	4	Where chlorine gas is used, are vents from feeders and storage discharged to the outside atmosphere, above grade?	YesNo	Yes
42	3	Where chlorine gas is used, are floor drains discharged to the outside of the building and not connected to other internal or external drainage systems?	YesNo	Yes
43	3	Is a bottle of ammonium hydroxide (56 per cent ammonia solution) available for chlorine leak detection?	YesNo	Yes
44	3	Are full and empty cylinders of chlorine gas restrained in position to prevent upset?	YesNo	Yes
45	3	Are full and empty cylinders of chlorine gas stored in rooms separate from ammonia storage?	YesNo	Yes
46	4	Are full and empty cylinders of chlorine gas stored in areas that are not in direct sunlight or exposed to excessive heat?	YesNo	Yes
47	2	If primary disinfection is accomplished using ozone, chlorine dioxide, or some other chemical that does not provide a residual disinfectant, is chlorine added to provide a residual disinfectant in the finished water?	YesNo	Yes
48	1	Is the disinfectant applied at a point which will provide adequate contact time?	YesNo	Yes
49	1	What is the contact time in minutes before the first customer?	Text	None
50	2	Are all basins used for disinfection contact time designed to minimize short circuiting?	YesNo	Yes
51	2	Is the residual disinfectant concentration determined each day during peak hourly flow at each residual disinfectant sampling point at or before the first customer? (or at other times approved by the authority)	YesNo	Yes
52	2	Is the equipment of such capacity that it will operate accurately over the desired feeding range?	YesNo	Yes
53	2	Are disinfection units controlled by flow switches that prevent the addition of disinfectant when no water is flowing?	YesNo	Yes
54	2	Is the temperature of the disinfected water monitored at least once per day at each residual disinfectant concentration sampling point?	YesNo	Yes

Treatment / Chlorination

Gaseous Chlorination:

1	2	Is there an automatic switch-over of chlorine cylinders provided to assure continuous disinfection?	YesNo	Yes
2	2	Is a weight scale provided for weighing chlorine gas cylinders / containers?	YesNo	Yes
3	3	Is the weight scale capable of providing reasonable precision in relation to average daily dose?	YesNo	Yes
4	3	Are the pipes carrying elemental liquid or dry gaseous chlorine under pressure made of Schedule 80 seamless steel tubing or other materials recommended by the Chlorine Institute (never use PVC)?	YesNo	Yes
5	3	Does the water supply to each eductor have a separate shut-off valve?	YesNo	Yes
6	3	Are gauges for measuring water pressure and vacuum at the inlet and outlet of each eductor provided?	YesNo	Yes

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
7	3	Is the chlorine solution injector/diffuser compatible with the point of application to provide a rapid and thorough mix with all the water being treated? (The center of a pipeline is the preferred application point)	YesNo	Yes
8	3	Is rubber, PVC, polyethylene, or other materials recommended by the Chlorine Institute used for chlorine solution piping and fittings?	YesNo	Yes
9	2	Are there any cross-connections in the chlorine feed makeup water or injection points?	YesNo	No
10	2	Is there a chlorine leak detector properly located for monitoring any leaks?	YesNo	Yes
11	3	Are safe practices followed during cylinder changes and maintenance?	YesNo	Yes
12	2	Is continuous chlorine leak detection equipment provided?	YesNo	Yes
13	2	Where a leak detector is provided, is it equipped with both an audible alarm and a warning light?	YesNo	Yes
15	3	Is there an appropriate leak repair kit approved by the Chlorine Institute provided?	YesNo	Yes
16	2	Is respiratory protection equipment, meeting the requirements of the National Institute for Occupational Safety and Health (NIOSH) available where chlorine gas is handled, and is it stored at a convenient location, but not inside any room where chlorine i	YesNo	Yes
17	3	Are cylinders and gas lines protected from temperatures above that of the feed equipment?	YesNo	Yes
18	3	Do pressurized chlorine feed lines carry chlorine gas beyond the chlorinator room?	YesNo	No
19	3	Is a scrubber provided to chemically neutralize chlorine gas before discharge from the water treatment plant building into the air?	YesNo	Yes
20	3	Is such equipment designed as part of the chlorine gas storage and feed areas to automatically engage in the event of any measured chlorine release?	YesNo	Yes
21	3	Is the equipment sized to treat the entire contents of the largest storage container on site?	YesNo	Yes
22	3	Is chlorine gas feed and storage enclosed and separated from other operating areas?	YesNo	Yes
23	3	Are the chlorinator rooms heated to 60 degrees F, and protected from excessive heat?	YesNo	Yes
24	4	Is the chlorine room provided with a shatter resistant inspection window installed in an interior wall?	YesNo	Yes
25	3	Is the chlorine room constructed in such a manner that all openings between the chlorine room and the remainder of the plant are sealed?	YesNo	Yes
26	3	Is the chlorine room provided with doors equipped with panic hardware, assuring ready means of exit and opening outward only to the building exterior?	YesNo	Yes
27	4	Where chlorine gas is used, does each room have a ventilating fan with a capacity that provides one complete air change per minute when the room is occupied?	YesNo	Yes
28	4	Where chlorine gas is used, does the ventilating fan take suction near the floor as far as practical from the door and air inlet, with the point of discharge so located as not to contaminate air inlets to any rooms or structures?	YesNo	Yes
29	4	Where chlorine gas is used, are all air inlets located near the ceiling and fitted with louvers?	YesNo	Yes
30	3	Where chlorine gas is used, do louvers for chlorine room air intake and exhaust facilitate airtight closure?	YesNo	Yes
31	3	Where chlorine gas is used, are there separate switches for the fan and lights located outside of the chlorine room and at the inspection window?	YesNo	Yes
32	3	Are outside switches protected from vandalism?	YesNo	Yes
33	4	Where chlorine gas is used, are vents from feeders and storage discharged to the outside atmosphere, above grade?	YesNo	Yes
34	3	Where chlorine gas is used, are floor drains discharged to the outside of the building and not connected to other internal or external drainage systems?	YesNo	Yes
35	3	Is a bottle of ammonium hydroxide (56 per cent ammonia solution) available for chlorine leak detection?	YesNo	Yes
36	3	Are full and empty cylinders of chlorine gas restrained in position to prevent upset?	YesNo	Yes

37	3	Are full and empty cylinders of chlorine gas stored in rooms separate from ammonia storage?	YesNo	Yes
38	4	Are full and empty cylinders of chlorine gas stored in areas that are not in direct sunlight or exposed to excessive heat?	YesNo	Yes

Treatment / Chlorination

Hypochlorination:

1	4	Are hypochlorite feeders of the positive displacement type?	YesNo	Yes
2	2	Is cross-connection control provided on the service water lines that discharge to the solution tanks?	YesNo	Yes
3	2	Is each tank provided with a valved drain, protected against backflow?	YesNo	Yes
4	2	Do overflow pipes, when provided, have free fall discharge?	YesNo	Yes
5	3	Are overflow pipes, when provided, located where they can be readily monitored?	YesNo	Yes
6	3	Are overflow pipes, when provided, turned downward with the end screened?	YesNo	Yes
7	2	Are subsurface locations for solution tanks free from sources of possible contamination?	YesNo	Yes
8	2	Do subsurface locations for solution tanks have positive drainage for groundwater, accumulated water, chemical spills and overflows?	YesNo	Yes
9	3	Do the day tanks hold at least a 30 hour supply of chemical solution?	YesNo	Yes
10	3	If a motor-driven transfer pump is provided, is a liquid level limit switch and an over-flow from the day tank provided?	YesNo	Yes
11	3	Are the chemical feed pumps sized to match or exceed maximum head conditions found at the point of injection?	YesNo	Yes
12	4	Are day tanks provided where bulk storage of liquid chemical is utilized?	YesNo	Yes
13	4	Are solution tanks provided with adequate secondary containment?	YesNo	Yes
14	3	Are there adequate spill containment provisions?	YesNo	Yes
15	3	Are acid storage tanks provided with separate vents that terminate to the outside atmosphere?	YesNo	Yes
16	3	Is there a procedure in place to ensure consistent strength of the chemical in the day tank?	YesNo	Yes
17	3	Is a means provided to measure the solution level in the day tank or storage tank?	YesNo	Yes
18	2	Are storage tanks and pipelines for liquid chemicals specified for use with individual chemicals and not used for different chemicals?	YesNo	Yes
19	3	Is the solution tank covered to minimize corrosive vapors?	YesNo	Yes

Treatment / Coagulation

Coagulation:

1	2	Is a primary coagulant used at all times the plant is in operation?	YesNo	Yes
2	2	What primary coagulant is being used?	DropDown	None
3	3	Is a coagulant aid or filter aid being added after the primary coagulant?	YesNo	None
4	2	Is there a process control plan in place for coagulation addition?	YesNo	Yes
5	2	Is the dosage rate of each chemical added calculated daily?	YesNo	Yes

Treatment / Filtration**General:**

- | | | | | |
|---|---|---|-------|-----|
| 1 | 3 | Are the filters operated to minimize flow variations? | YesNo | Yes |
| 2 | 3 | Are instrumentation and controls for the process operational, and in service? | YesNo | Yes |

Treatment / Filtration**Cartridge:**

- | | | | | |
|---|---|--|----------|------|
| 1 | 3 | What filter element is used in the cartridge? | DropDown | None |
| 2 | 3 | What is the filter pore size? | Text | None |
| 3 | 3 | How frequently are the filters cleaned per year? | Numeric | None |
| 4 | 3 | What is the typical time between filter replacements? | Text | None |
| 5 | 3 | Is pretreatment used to prevent rapid fouling? | YesNo | Yes |
| 6 | 2 | Is disinfection being used to prevent fouling and reduce microbial pass-through? | YesNo | Yes |
| 7 | 3 | Is the filter media compatible with the housing? | YesNo | Yes |

Treatment / Filtration**Diatomaceous Earth:**

- | | | | | |
|---|---|---|----------|------|
| 1 | 4 | What type of filter is used? | DropDown | None |
| 2 | 3 | Is the flow to the filters continuous? | YesNo | Yes |
| 3 | 3 | Is the minimum precoat thickness 1/8 inch? | YesNo | Yes |
| 4 | 3 | Is continuous body feed being used? | YesNo | Yes |
| 5 | 3 | What are typical filter run times in minutes? | Numeric | None |
| 6 | 3 | Is the filter septum inspected periodically? | YesNo | Yes |
| 7 | 3 | Is the filter septum cleaned regularly? | YesNo | Yes |
| 8 | 4 | How is the spent filter cake disposed of? | Text | None |

Treatment / Filtration**Pressure Sand:**

- | | | | | |
|---|---|---|---------|------|
| 1 | 3 | Are there more than one filters? | YesNo | Yes |
| 2 | 3 | Are the filters housed or covered? | YesNo | Yes |
| 3 | 3 | What is the depth of the sand media in feet? | Numeric | None |
| 4 | 3 | Is the flow accurately measured to each filter? | YesNo | Yes |
| 5 | 2 | Are there adequate sampling taps from each filter? | YesNo | Yes |
| 6 | 3 | What is the average and maximum filtration rate employed? | Text | None |

7	2	How often are the filters cleaned?	Text	None
8	3	Are head loss gauges used to determine when a filter is to be cleaned?	YesNo	Yes
9	3	How much media is removed when a filter is cleaned?	Text	None
10	3	Is a filter ripened before going back in service?	YesNo	Yes
11	3	What is the minimum depth of media allowable before additional sand is added in feet?	Numeric	None

Treatment / Filtration

Rapid Sand:

1	2	What are filter effluent quality goals?	Text	None
2	3	What type of filtration media system is being utilized?	DropDown	None
3	3	What is the average and maximum filtration rate utilized throughout the year?	Text	None
4	3	Are media depths periodically checked against design standards?	YesNo	Yes
5	3	Are the filters evaluated regularly to determine condition of media?	YesNo	Yes
6	2	What are typical filter run times?	Text	None
7	3	Are filter run times consistent throughout the year?	YesNo	Yes
8	2	What criteria is used to determine when a filter backwash is required?	DropDown	None
9	2	Is there an SOP for the backwash procedure?	YesNo	Yes
10	3	What is the minimum and maximum backwash rate used?	Text	None
11	3	Are the filters equipped with a surface wash or air scour system to enhance the efficiency of the backwash process?	DropDown	Yes
12	2	Is filter-to-waste practiced at the end of a backwash?	YesNo	Yes

Treatment / Filtration

Slow Sand:

1	3	Are there more than one filters?	YesNo	Yes
2	3	Are the filters housed or covered?	YesNo	Yes
3	3	What is the depth of the sand media in feet?	Numeric	None
4	3	Is the flow accurately measured to each filter?	YesNo	Yes
5	2	Are there adequate sampling taps from each filter?	YesNo	Yes
6	3	What is the average and maximum filtration rate employed?	Text	None
7	2	How often are the filters cleaned?	Text	None
8	3	Are head loss gauges used to determine when a filter is to be cleaned?	YesNo	Yes
9	3	How much media is removed when a filter is cleaned?	Text	None
10	3	Is a filter ripened before going back in service?	YesNo	Yes
11	3	What is the minimum depth of media allowable before additional sand is added in feet?	Numeric	None

Treatment / Filtration**Ultrafiltration:**

1	3	What is the treatment objective for this particular membrane?	Text	None
2	3	Is pretreatment being utilized?	YesNo	Yes
3	3	How often is a membrane backwashed?	Text	None
4	3	Is the backwashing procedure fully automatic?	YesNo	Yes
5	3	Is chemical cleaning periodical accomplished?	YesNo	Yes
6	3	Is adequate monitoring being conducted to prevent premature fouling?	YesNo	Yes
7	3	Is the unit properly sealed to prevent leakage?	YesNo	Yes
8	3	What is the percent waste stream?	Numeric	None
9	3	Is adequate monitoring in place to insure membrane integrity?	YesNo	Yes
10	3	How is the waste stream disposed of?	Text	None

Treatment / Flocculation**Flocculation:**

1	3	Are the flocculators equipped with variable speed controls?	YesNo	Yes
2	3	Is there an SOP for adjusting flocculator speed?	YesNo	Yes
3	3	Is there evidence of short-circuiting resulting in poor floc formation?	YesNo	No
4	3	Does the inlet and outlet design prevent short-circuiting and destruction of floc?	YesNo	Yes
5	2	Is baffling incorporated into the units to enhance the flocculation process?	YesNo	Yes
6	3	Is there a detention time for floc formation of at least 30 minutes?	YesNo	Yes
7	3	Is the flow-through velocity not less than .5 nor greater than 1.5 feet per minute?	YesNo	Yes
8	3	Is there a cover over the flocculation basin? (if required by authorities)	YesNo	Yes
9	3	Is a drain and/or pumps provided to handle dewatering and sludge removal?	YesNo	Yes

Treatment / Fluoridation**General:**

1	3	Can the operator answer basic questions about the fluoridation process, including what is done, as well as when and why it is done?	YesNo	Yes
2	2	Is there a proper concentration of fluoride in the distribution system at all times?	YesNo	Yes
3	2	Are fluoride concentrations tested in the system daily?	YesNo	Yes
4	2	Does the fluoride concentration vary from day to day?	YesNo	No
5	2	Is the testing procedure for determining fluoride concentration in the finished water performed correctly?	YesNo	Yes
6	2	When was the last time the testing instrument was calibrated?	Date	None

Treatment / Fluoridation**Fluoridation:**

1	1	Does the sodium fluoride, sodium silicofluoride and hydrofluosilicic acid comply with third party standards such as NSF?	YesNo	Yes
2	3	Are fluoride chemicals isolated from other chemicals to prevent contamination?	YesNo	Yes
3	3	Are fluoride compounds stored in covered or unopened shipping containers and stored inside a building?	YesNo	Yes
4	3	Is there a floor drain in the fluoride storage or treatment area?	YesNo	Yes
5	3	Are unsealed storage units for hydrofluosilicic acid vented to the atmosphere at a point outside any building?	YesNo	Yes
6	3	Is the enclosure provided with an exhaust fan and a dust filter which place the hopper under a negative pressure?	YesNo	Yes
7	3	Are dry fluoride compounds transferred from shipping containers to storage bins in a way that minimizes fluoride dust?	YesNo	Yes
8	3	Are feeders calibrated once each year to insure accuracy?	YesNo	Yes
9	2	In an acid feed system, is the solution tank mounted on a scale so that the total quantity of fluoride used each day can be calculated and recorded?	YesNo	Yes
10	2	Is there a fail-safe device, such as a flow sensor, incorporated in the fluoride feed control system to prevent overfeeding fluoride?	YesNo	Yes
11	3	Are fluoride compounds added close to the application point of lime?	YesNo	No
12	3	Is the point of application of fluorosilicic acid into the lower half of a horizontal pipe?	YesNo	Yes
13	2	Are fluoride solutions injected at a point of continuous positive pressure ?	YesNo	Yes
14	3	Are the saturators of the up-flow type?	YesNo	None
15	2	Is the dilution water line protected from the potential for backflow conditions to exist?	YesNo	Yes
16	3	Is there a flowmeter on the inlet water supply line to a saturator?	YesNo	Yes
17	3	Is there an adequate level of fluoride crystals in the saturator?	YesNo	Yes
18	3	Is the saturator tank disassembled and cleaned once a year?	YesNo	Yes
19	3	Is a proper method used to dispose of old fluoride crystals?	YesNo	Yes

Treatment / Inhibitor Addition**General:**

1	1	Has the system been in compliance with the lead and copper rule?	YesNo	Yes
2	3	Is test data available that characterizes the corrosive nature of the raw water?	YesNo	Yes
3	3	What sampling is conducted in the distribution system as part of the corrosion control program?	Text	None
4	3	Is the test equipment to monitor the data appropriate and in good working order?	YesNo	Yes

Treatment / Inhibitor Addition**Bimetallic Phosphate:**

1	3	Are phosphates fed into the drinking water for corrosion control?	YesNo	None
2	3	Is ph/alkalinity adjustment used as a corrosion control strategy? If so what chemicals are being utilized?	Text	None
3	3	Are phosphates fed into the drinking water in conjunction with pH adjustment?	YesNo	None

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
4	2	Have all proprietary compounds received the specific approval of the reviewing authority before use?	YesNo	Yes
5	3	Are stock phosphate solution kept covered and disinfected by carrying approximately 10 milligrams per liter free chlorine residual? (Phosphate solutions having a pH of 2.0 or less may be exempt from this requirement by the reviewing authority)	YesNo	Yes
6	2	Are satisfactory chlorine residuals maintained in the distribution system when phosphates are used?	YesNo	Yes
7	3	Is phosphate testing conducted in the distribution system?	YesNo	Yes

Treatment / Inhibitor Addition

Hexametaphosphate:

1	3	Are phosphates fed into the drinking water for corrosion control?	YesNo	None
2	3	Is ph/alkalinity adjustment used as a corrosion control strategy? If so what chemicals are being utilized?	Text	None
3	3	Are phosphates fed into the drinking water in conjunction with pH adjustment?	YesNo	None
4	2	Have all proprietary compounds received the specific approval of the reviewing authority before use?	YesNo	Yes
5	3	Are stock phosphate solution kept covered and disinfected by carrying approximately 10 milligrams per liter free chlorine residual? (Phosphate solutions having a pH of 2.0 or less may be exempt from this requirement by the reviewing authority)	YesNo	Yes
6	2	Are satisfactory chlorine residuals maintained in the distribution system when phosphates are used?	YesNo	Yes
7	3	Is phosphate testing conducted in the distribution system?	YesNo	Yes

Treatment / Inhibitor Addition

Orthophosphate:

1	3	Are phosphates fed into the drinking water for corrosion control?	YesNo	None
2	3	Is ph/alkalinity adjustment used as a corrosion control strategy? If so what chemicals are being utilized?	Text	None
3	3	Are phosphates fed into the drinking water in conjunction with pH adjustment?	YesNo	None
4	2	Have all proprietary compounds received the specific approval of the reviewing authority before use?	YesNo	Yes
5	3	Are stock phosphate solution kept covered and disinfected by carrying approximately 10 milligrams per liter free chlorine residual? (Phosphate solutions having a pH of 2.0 or less may be exempt from this requirement by the reviewing authority)	YesNo	Yes
6	2	Are satisfactory chlorine residuals maintained in the distribution system when phosphates are used?	YesNo	Yes
7	3	Is phosphate testing conducted in the distribution system?	YesNo	Yes

Treatment / Inhibitor Addition

Polyphosphate:

1	3	Are phosphates fed into the drinking water for corrosion control?	YesNo	None
2	3	Is ph/alkalinity adjustment used as a corrosion control strategy? If so what chemicals are being utilized?	Text	None
3	3	Are phosphates fed into the drinking water in conjunction with pH adjustment?	YesNo	None
4	2	Have all proprietary compounds received the specific approval of the reviewing authority before use?	YesNo	Yes
5	3	Are stock phosphate solution kept covered and disinfected by carrying approximately 10 milligrams per liter free chlorine residual? (Phosphate solutions having a pH of 2.0 or less may be exempt from this requirement by the reviewing authority)	YesNo	Yes

6	2	Are satisfactory chlorine residuals maintained in the distribution system when phosphates are used?	YesNo	Yes
7	3	Is phosphate testing conducted in the distribution system?	YesNo	Yes

Treatment / Ion Exchange**General:**

1		Is the sodium content in the finished water of concern?	YesNo	No
2	4	Is iron or manganese removed using ion exchange?	YesNoLeadin	None
2.01	3	If yes, does the water contain more than 0.3 milligrams per liter of iron, manganese or combination thereof?	YesNo	No
2.02	3	Does the raw water or wash water contain dissolved oxygen or other oxidants?	YesNo	No
3	3	When iron, manganese, or a combination of the two, is one milligram per liter or more is pre-treatment being used?	YesNoLeadin	Yes
3.01	3	If yes, is the automatic regeneration based on volume of water softened?	YesNo	Yes
3.02	3	Does the design capacity for hardness removal exceed 20,000 grains per cubic foot (46 kg/m3) when resin is regenerated with 0.3 pounds (0.14 kg) of salt per kilogram of hardness removed?	YesNo	No
3.03	3	Does the rate of softening exceed seven gallons per minute per square foot of bed area?	YesNo	No
3.04	3	Are taps located to provide for sampling of the softener influent, effluent and blended water?	YesNo	Yes
3.05	3	Is a bypass provided around softening units to produce a blended water of desirable hardness?	YesNo	Yes
3.06	3	Are totalizing meters installed on the bypass line and on each softener unit?	YesNo	Yes
3.07	3	Does the bypass line have a shutoff valve?	YesNo	Yes
3.08	3	Does the bypass line have an automatic proportioning or regulating device?	YesNo	Yes
3.09	4	Is it necessary to treat the bypassed water to obtain acceptable levels of iron and/or manganese in the finished water?	YesNo	No
3.1	3	Is the pH of the water above 8.4, or does the water contain iron or contain less than six milligrams per liter silica?	YesNo	No
3.11	3	Is a smooth-nose sampling tap provided for the collection of representative samples?	YesNo	Yes
3.12	3	Is the sampling tap for the blended water at least 20 feet downstream from the point of blending?	YesNo	Yes
3.13	3	Is there a sampling tap provided on the brine tank discharge piping?	YesNo	Yes
3.14	3	Are any petcocks being utilized as sampling taps?	YesNo	No

Treatment / Ion Exchange**Ion Exchange:**

1	4	What type of design is the ion exchange unit?	DropDown	None
2	2	Is the salt that is used for the brine solution approved by an ANSI accredited organization?	YesNo	Yes
3	4	Is bagged salt and dry bulk salt storage enclosed and separated from other operating areas in order to prevent damage to equipment?	YesNo	Yes
4	3	Are salt dissolving or brine tanks and wet salt storage tanks covered and corrosion-resistant?	YesNo	Yes
5	4	Is the depth of the exchange resin less than three feet?	YesNo	No
6	3	Are rate-of-flow controllers or the equivalent installed to control flow rates?	YesNo	Yes

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
7	3	Is the backwash rate six to eight gallons per minute per square foot of bed area (14 - 20 m/hr)?	YesNo	Yes
8	4	How much freeboard is above the resin (feet)?	Numeric	None
9	3	Are facilities included for even distribution of the brine over the entire surface of both upflow and downflow units?	YesNo	Yes
10	3	If the water contains a chlorine residual, Is the ion exchange resin of the type that is not damaged by residual chlorine? (Phenolic resin should not be used).	YesNo	Yes
11	3	Is the water for filling the tank distributed over the entire surface by pipes above the maximum brine level in the tank?	YesNo	Yes
12	3	Are the tanks provided with an automatic declining level control system on the make-up water line?	YesNo	Yes
13	2	Are make-up water, backwash, rinse and air relief discharge pipes installed in such a manner as to prevent any possibility of back-siphonage?	YesNo	Yes
14	4	Are openings provided with raised curbs and watertight covers and having overlapping edges similar to those required for finished water reservoirs?	YesNo	Yes
15	2	Are overflows protected with corrosion resistant screens and terminate with either a turned down bend having a proper free fall discharge or a self-closing flap valve?	YesNo	Yes
16	4	Are wet salt storage basins equipped with manholes or hatchways for access and for direct dumping of salt from truck or railcar?	YesNo	Yes
17	4	Are two wet salt storage tanks or compartments provided and designed to operate independently of each other?	YesNo	Yes
18	4	Is the salt supported on graduated layers of gravel placed over a brine collection system?	YesNo	Yes
19	3	Is the total salt storage area have sufficient capacity to store in excess of 1.5carloads or truckloads of salt, and provide for at least 30 days of operation?	YesNo	Yes
20	3	Is an eductor used to transfer brine from the brine tank to the ion exchange units?	YesNo	Yes
21	3	If a pump is used to transfer brine, is a brine measuring tank or means of metering provided to obtain proper dilution?	YesNo	Yes
22	3	Is spent brine used for regeneration?	YesNo	None
23	4	Are pipes and contact materials resistant to the aggressiveness of salt?	YesNo	Yes
24	4	Is steel and concrete coated with a non-leaching protective coating which is compatible with salt and brine?	YesNo	Yes
25	3	Is suitable disposal provided for brine waste?	YesNo	Yes
26		Is the brine discharged to a sanitary sewer?	YesNo	None
27		Is a holding tank of sufficient size provided to allow the brine to be discharged over a twenty-four hour period?	YesNo	Yes

Treatment / Lime - Soda Ash Addition

General:

1	2	Is excess lime being used as a substitute for disinfection?	YesNo	No
2	3	Is equipment for stabilization of water softened by the lime or lime-soda process provided?	YesNo	Yes
3	3	Are plant processes manually started following shut-down?	YesNo	Yes
4	4	Are provisions included for proper disposal of softening sludges?	YesNo	Yes
5	3	Is test equipment for alkalinity, total hardness, carbon dioxide content, and pH provided to determine treatment effectiveness?	YesNo	Yes

Treatment / Lime - Soda Ash Addition**Lime - Soda Ash Addition:**

1	4	Is carbon dioxide added to the drinking water for recarbonation?	YesNo	None
2	3	Does the plant generate carbon dioxide from combustion?	YesNoLeadin	None
2.01	2	If yes, does the plant have open top recarbonation tanks in order to dissipate carbon monoxide gas?	YesNo	Yes
3	4	Does the plant use liquid carbon dioxide?	YesNoLeadin	None
3.01	3	If yes, is adequate precautions taken to prevent carbon dioxide from entering the plant from the recarbonation process?	YesNo	Yes
4		Does the facility use recarbonation basins?	YesNoLeadin	None
4.01	3	If yes, does the recarbonation basin design provide a total detention time of twenty minutes?	YesNo	Yes
4.02	3	Does the recarbonation basin design provide two compartments, with a depth that will provide a diffuser submergence of not less than 7.5 feet nor greater submergence than recommended by the manufacturer?	YesNo	Yes
4.03	3	Does the recarbonation basin have a mixing compartment with a detention time of at least three minutes?	YesNo	Yes
4.04	4	Does the recarbonation basin have a reaction compartment?	YesNo	Yes
4.05	4	Are provisions made for draining the recarbonation basin and removing sludge?	YesNo	Yes
4.06	3	Is laboratory equipment provided for determining the effectiveness of stabilization treatment?	YesNo	Yes

Treatment / Micro Screening**Micro Screening:**

1	3	What is the treatment objective for this particular membrane?	Text	None
2	3	Is pretreatment being utilized?	YesNo	Yes
3	3	How often is a membrane backwashed?	Text	None
4	3	Is the backwashing procedure fully automatic?	YesNo	Yes
5	3	Is chemical cleaning periodical accomplished?	YesNo	Yes
6	3	Is adequate monitoring being conducted to prevent premature fouling?	YesNo	Yes
7	3	Is the unit properly sealed to prevent leakage?	YesNo	Yes
8	3	What is the percent waste stream?	Numeric	None
9	3	Is adequate monitoring in place to insure membrane integrity?	YesNo	Yes
10	3	How is the waste stream disposed of?	Text	None

Treatment / Rapid Mix**Rapid Mix:**

1	3	Is the lime and recycled sludge fed directly into the rapid mix basin?	YesNo	Yes
2	3	Do the rapid mix basins provide not more than 30 seconds detention time with adequate velocity gradients to keep the lime particles dispersed?	YesNo	Yes
3	3	Is the detention period more than thirty seconds?	YesNo	None

Treatment / Reverse Osmosis**Reverse Osmosis:**

1	3	What is the treatment objective for this particular membrane?	Text	None
2	3	Is pretreatment being utilized?	YesNo	Yes
3	3	How often is a membrane backwashed?	Text	None
4	3	Is the backwashing procedure fully automatic?	YesNo	Yes
5	3	Is chemical cleaning periodical accomplished?	YesNo	Yes
6	3	Is adequate monitoring being conducted to prevent premature fouling?	YesNo	Yes
7	3	Is the unit properly sealed to prevent leakage?	YesNo	Yes
8	3	What is the percent waste stream?	Numeric	None
9	3	Is adequate monitoring in place to insure membrane integrity?	YesNo	Yes
10	3	How is the waste stream disposed of?	Text	None

Treatment / Sedimentation**General:**

1	3	Are the clarification units constructed to permit units to be taken out of service without disrupting operation?	YesNo	Yes
2		Are the basins designed to minimize short-circuiting?	YesNo	Yes
3	3	Does it appear that there is short circuiting in the sedimentation basin?	YesNo	No
4	3	Is there significant floc carryover out of the sedimentation basins going to the filters?	YesNo	No
5		Does the overflow weir discharge by gravity with a free fall at a location where the discharge can be observed?	YesNo	Yes
6		Does the weir loading exceed 10 gallons per minute per foot of weir length for units used for clarifiers?	YesNo	No
7	3	Are the basins provided with a convenient means for dewatering that minimizes down time?	YesNo	Yes
8	3	Are the clarification units being started manually following shutdown?	YesNo	Yes
9	3	What process control testing is performed on the settled water?	Text	None
10	3	Is the system designed so that the operator may observe and sample sludge being withdrawn from the unit?	YesNo	Yes
11	4	Is there a cover over the sedimentation basins?	YesNo	Yes
12	4	Are submerged orifices located lower than three feet below the flow line?	YesNo	Yes
13	4	Does the entrance velocity through the submerged orifices exceed 0.5 feet per second?	YesNo	No
14	4	Does the velocity through the settling basins exceed 0.5 feet per minute?	YesNo	No
15	4	Does the rate of flow over the outlet weirs or through the submerged orifices exceed 20000 gallons per day per foot (250 m3/day/m) of the outlet launder?	YesNo	No
16	4	Are valves located outside the sludge tank for accessibility?	YesNo	Yes
17	3	Does the water contain high turbidity and require pretreatment (sedimentation)?	YesNoLeadin	None

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
17.01	3	Does the pre-sedimentation process use the addition of a coagulation chemical?	YesNoLeadIn	None
17.02	3	If yes, what is the coagulation chemical?	Text	None
17.03	3	Is there a minimum detention time of three hours?	YesNo	Yes
17.04	4	Is short-circuiting present at the inlet of the presedimentation basin?	YesNo	No
17.05	4	Does the presedimentation basin have continuous mechanical sludge removal equipment?	YesNo	Yes
17.06	4	Are provisions for bypassing the presedimentation basins included in the design of the system?	YesNo	Yes

Treatment / Sedimentation

Sedimentation:

1	3	Does the sedimentation process have a minimum detention time of four hours?	YesNo	Yes
2	4	Are the inlets designed to distribute the water equally and at uniform velocities?	YesNo	Yes
3		Does the facility use tube/plate settlers?	YesNoLeadIn	None
3.01	3	Are the settlers protected from freezing? (outdoor installations must provide sufficient freeboard above the top of settlers to prevent freezing in the units)	YesNo	Yes
3.02	3	Is the maximum rate of flow through the tube settlers 2 gpm per square foot of cross-sectional area (4.8 m/hr) , unless higher rates are successfully shown through pilot plant or in-plant demonstration studies?	YesNo	Yes
3.03	3	Is there a maximum plate loading rate of 0.5 gpm per square foot (1.2 m/hr) based on 80 percent of the projected horizontal area?	YesNo	Yes
3.04	4	Are flushing lines provided to facilitate maintenance?	YesNo	Yes
3.05	3	Are drainage pipes from the settler units sized to facilitate a quick flush of the settler units and to prevent flooding other portions of the plant?	YesNo	Yes
4		Does the facility use solids contact clarifiers?	YesNoLeadIn	None
4.01	3	If yes, based on design flow rates, are two to four hours of detention time provided for solids contact clarifiers treating surface water?	YesNo	Yes
4.02	3	Are chemicals added in a manner to insure satisfactory mixing of the chemicals with the water?	YesNo	Yes
4.03	3	Are mixing devices providing good mixing of the raw water with previously formed sludge particles?	YesNo	Yes
4.04	3	Are mixing devices preventing the deposition of solids in the mixing zone?	YesNo	Yes
4.05	4	Does the mixing equipment provide for coagulation in a separate chamber or in a baffled zone within the unit?	DropDown	None
4.06	3	Is adequate piping with suitable sampling taps located as to permit the collection of samples of water from critical portions of the units?	YesNo	Yes
4.07	4	Does the equipment provide either internal or external concentrators in order to obtain a concentrated sludge with a minimum of wastewater?	YesNo	Yes
4.08	2	Is cross-connection control included for the potable water lines used to backflush sludge lines?	YesNo	Yes
4.09	3	Are units provided with suitable controls for sludge withdrawal?	YesNo	Yes
4.1	4	Do total water losses exceed three percent for softening units?	YesNo	No
4.11	4	Do total water losses exceed five percent for clarifiers?	YesNo	No
4.12	4	Are the weirs adjustable, and at least equivalent in length to the perimeter of the tank?	YesNo	Yes

Treatment / Sequestration**General:**

1	4	Does the raw water have Fe levels greater than 0.3 mg/l?	YesNo	None
2		Does the raw water have Mn levels greater than 0.05 mg/l?	YesNo	None
3	3	Are taps located on each raw water source, each treatment unit influent and each treatment unit effluent?	YesNo	Yes
4	3	Are smooth-nosed sampling taps provided for process control purposes?	YesNo	Yes
5	3	Does the test equipment have the capacity to accurately measure the iron content to a minimum of 0.10 milligrams per liter and the manganese content to a minimum of 0.02 milligrams per liter?	YesNo	Yes

Treatment / Sequestration**Sequestration:**

1	4	Is iron and/or manganese being sequestered by the addition of a phosphate?	YesNoLeadin	None
1.01	4	If yes, is the iron, manganese or combination thereof less than 1 milligrams per liter?	YesNo	Yes
2	4	If no iron or manganese removal treatment is provided, is the point of application of the phosphates prior to any aeration, oxidation or disinfection?	YesNo	Yes
3	4	Does the total phosphate applied exceed 10 milligrams per liter as PO ₄ ?	YesNo	No
4	3	Are stock phosphate solutions kept covered and disinfected by carrying approximately 10 milligrams per liter free chlorine residual? (Phosphate solutions having a pH of 2.0 or less may be exempted from this requirement by the reviewing author)	YesNo	Yes
5	3	Where phosphate sequestration is practiced, is appropriate phosphate testing equipment provided?	YesNo	Yes
6	3	Where phosphate treatment is used, are satisfactory chlorine residuals maintained in the distribution system?	YesNo	Yes

Treatment / Sludge Treatment**Sludge Treatment:**

1		Does the plant use holding tanks for sludge handling?	YesNoLeadin	None
1.01	4	Are holding tanks of such a size that it will contain the anticipated volume of waste wash water produced by the plant when operating at design capacity?	YesNo	Yes
1.02	3	If the plant has two production filters, does it have a holding tank that will contain the total waste wash water from both filters?	YesNo	Yes
2		Does the plant use lagoons for sludge treatment?	YesNoLeadin	None
2.01	4	Are lagoons used for the removal of chemical sludge?	YesNo	None
2.02	4	Is there a minimum of two cells, each with appropriate inlet/outlet structures to facilitate independent filling/dewatering operations?	YesNo	Yes
2.03	4	Is there adequate freeboard of at least two feet?	YesNo	Yes
2.04	4	Is there an adjustable decanting device?	YesNo	Yes
2.05	4	Is the lagoon(s) designed with volume of 10 times the total quantity of wash water discharged during any 24-hour period?	YesNo	Yes
2.06	4	Is the outlet of the lagoon at the end opposite the inlet?	YesNo	Yes
2.07	4	Are dikes, deflecting gutters or other means of diverting surface water provided so that it does not flow into the lagoons?	YesNo	Yes
2.08	4	Are there adequate safety provisions?	YesNo	Yes

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
2.09		Are provisions made for convenient cleaning?	YesNo	Yes
2.1		Is an acceptable means of final sludge disposal provided?	YesNo	Yes
3		Does the plant use drying beds for sludge treatment?	YesNoLeadin	None
3.01	3	Is the total bed area sufficient to adequately dewater applied solids?	YesNo	Yes
3.02	3	Does the drying bed have sufficient capacity to contain the entire volume of wash water produced by washing all of the production filters in the plant?	YesNo	Yes
3.03	4	Is the bed subject to flooding by surface runoff or flood waters?	YesNo	No
3.04	3	Are two or more beds provided? (Unless the bed is small enough to be cleaned and returned to service in one day)?	YesNo	Yes
3.05	4	Is the bed provided with an adequate under-drainage collection system to permit satisfactory discharge of filtrate?	YesNo	Yes
3.06	4	Are provision made for the sampling of the drying bed effluent?	YesNo	Yes
3.07	4	Are flash boards or other non-watertight devices used in the construction of drying bed side walls?	YesNo	Yes
3.08	4	Are overflow devices from drying beds provided?	YesNo	Yes
3.09	3	Is there a roof over the beds?	YesNo	Yes
3.1	3	If no, does rainwater prevent adequate turnover?	YesNo	Yes
3.11	3	If freezing is a problem, are provisions made for covering the beds during the winter months?	YesNo	Yes
3.12		Are provisions made for convenient cleaning?	YesNo	Yes

Pump Stations / General

1		What is the name & location of this pumping station?	Text	None
2		What is the purpose of this pumping station?	DropDown	None
3		Where does this pumping station pump from and to?	Text	None
4		What is the average daily demand of this pumping station? (MGD)	Numeric	None
5		What is the actual pumping capacity of this station? (GPD or MGD)	Numeric	None
6	2	Is the actual capacity of the pumping facility adequate to meet the demand?	YesNo	Yes
7		How is pump output capacity determined?	DropDown	None
8	4	Is the output capacity verified at least annually?	YesNo	Yes
9	2	Are all pumping units operable?	YesNo	Yes
10	3	Is all of the pumping equipment in good condition?	YesNo	Yes
11		Are the pumps located in a pumping station?	YesNoLeadin	
12	2	Is security around the pumping station adequate?	YesNo	Yes
13	2	Is the pump facility properly protected against unauthorized entry?	YesNo	Yes
14	2	Is the outside panel for switches, valves, etc. protected from unauthorized access?	YesNo	Yes
15	3	If a critical pump fails to operate, are operators notified of this by an telephone dialer or similar automatic system?	YesNo	Yes

16 2 If no, is there a local alarm system and do area residents know to call the system in the event that it activates?

YesNo Yes

Pump Stations / Design

1	What type of pump(s) are at this pumping station?	DropDown	None
2	2 Is the type of pump suitable to the application?	YesNo	Yes
3	How many pumping units are provided?	Numeric	None
4	How many parallel pumps are provided at this location?	Numeric	None
5	2 Are there at least two equal and functioning pumping units? (Note: For well systems, consider other wells)	YesNo	Yes
6	2 Can the demand be met by the remaining pump(s) when the largest pumping unit is out of service?	YesNo	Yes
7	2 Is the building and equipment protected from flooding?	YesNo	Yes
8	3 Is proper drainage provided?	YesNo	Yes
9	3 Is heating, ventilation, and lighting adequate?	YesNo	Yes
10	3 Can equipment be accessed for maintenance and removal from the building?	YesNo	Yes
11	2 Are cross-connections present in pumping stations?	YesNo	No
12	Is each pump discharge line equipped with:	Header	None
12.01	2 a positive-acting check valve between the pump and the isolation valve?	YesNo	Yes
12.02	3 isolation gate valves?	YesNo	Yes
12.03	4 pressure gauge?	YesNo	Yes
12.04	3 flow meter?	YesNo	Yes
12.05	3 blow-off line	YesNo	Yes
13	3 Are gate valves located on suction and discharge sides of each pump (flooded suction applications)?	YesNo	Yes
14	3 Is an air release valve located between the source and check valve? (Recommended for Vertical Turbine Pumps)	YesNoLeadin	Yes
14.01	2 Is the discharge line from the air release valve properly protected to prevent the entrance of contaminants?	YesNo	Yes
15	Are the pumps controlled manually?	YesNoLeadin	None
15.01	2 Is this suitable to the application of the pumping station?	YesNo	Yes
16	Are pumps controlled automatically?	YesNoLeadin	None
16.01	What type of automatic control function is used?	DropDown	None
16.02	2 Is the type of automatic control suitable to the application of the pumping station?	YesNo	Yes
17	2 Do the controls include an adequate failure alarm system?	YesNo	Yes
18	Are chemical feeders tied to the pump controls?	YesNoLeadin	None
18.01	If yes, what chemicals are fed?	Text	None
18.02	2 Do the controls include a fail-safe device to stop chemical feed in the event of loss of water flow?	YesNo	Yes

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
19	4	Do the controls include elapsed time meters (ETMs)	YesNo	Yes
20	3	Are all controls protected inside a waterproof cabinet?	YesNo	Yes
21	2	Does the pump station have automatic signaling apparatus which will report when the station is out of service?	YesNo	Yes
22		Does the system control pumps through a SCADA system?	YesNoLeadin	None
22.01	2	If yes, and the SCADA system is out of service, can personnel operate the system manually?	YesNo	Yes

Pump Stations / Operation

1	3	Is the building in good structural condition?	YesNo	Yes
2	3	Is the building orderly and clean?	YesNo	Yes
3	3	Is safety equipment adequate?	YesNo	Yes
4	4	Is there any leaking water from the piping or appurtenances?	YesNo	No
5	4	If there is a stuffing box / packing unit for cooling the pump drive shaft, is the leakage rate greater than 2 - 4 drops per second?	YesNo	No
6	3	Is there any dirt / grime around the pump or motor?	YesNo	No
7	3	Is there any leaking lubricant around the pump or motor?	YesNo	No
8	3	Is rotating and electrical equipment provided with protective guards?	YesNo	Yes
9	3	Are the correct types of lubricant used?	YesNo	Yes
10		Are pump or drive shaft bearings oil lubricated?	YesNoLeadin	None
10.01	2	If yes, is the oil approved by an ANSI accredited organization?	YesNo	Yes
11	3	Is the frequency and amount of lubrication adequate?	YesNo	Yes
12	2	Is there any excessive noise/ vibration/ heat/ odors?	YesNo	No
13		What is the maximum number of duty cycles (on/off) that this pump operates? (per hour or per day)	Numeric	None
14	3	Are the duty cycle rates excessive?	YesNo	No
15	3	Is the control system set to prevent excessive cycling of the pump?	YesNo	Yes
16	2	Are toxic chemicals, hazardous or flammable materials or lubricants stored inside the pumping station?	YesNo	No
17	3	Are adequate operational records maintained for pumping facilities?	YesNo	Yes
18	3	Is the pumping station and it's components included in a preventive maintenance schedule?	YesNo	Yes
19	3	Are valves exercised regularly?	YesNo	Yes
20	3	Are all appurtenances in good condition and functioning properly?	YesNo	Yes
21	2	Are the controls adequately maintained and in good working order?	YesNo	Yes

Security / Management

Customers:

1	1	Has the system identified all of its critical water customers?	YesNo	Yes
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QuestionNumber		Sanitary Survey Questions --- ESS Comprehensive	Response Type	Correct Response
2	1	Would loss of water quantity and quality affect the critical facilities?	YesNoLeadin	No
2.01	1	Are measures in place to protect against this?	YesNo	Yes
3		How quickly could an alternative source be secured for critical customers?	Text	None
4		Are there any high-density population areas served by the system?	YesNo	None
5		Is the system's main purpose to provide:	DropDown	None

Security / Management

Emergency Response Plan:

1	1	Is an emergency response or contingency plan available and workable?	YesNo	Yes
2	1	If the system has a plan, is it is accessible to all system personnel and appropriate local officials?	YesNo	Yes
3	1	Is there an Emergency Contact List for the Emergency Response Plan?	YesNo	Yes
4		Does the emergency plan include workable plans or sections that address the areas listed below?	Header	None
4.01	1	Source protection?	YesNo	Yes
4.02	1	Sampling and monitoring?	YesNo	Yes
4.03	1	Emergency or contingency?	YesNo	Yes
4.04	1	Repair and/or replacement?	YesNo	Yes
4.05	1	Contamination assessment?	YesNo	Yes
5	2	Does a representative of the system attend regular Local Emergency Planning Committee (LEPC) meetings to review the emergency plan?	YesNo	Yes
6	1	Do operating staff have the authority to make required emergency response decisions?	YesNo	Yes
7	1	Are there any policies that could prevent staff from responding to emergencies effectively?	YesNo	No
8	1	Are administrators familiar with, and accountable for, security needs?	YesNo	Yes
9	1	Is there a hazard communication program in place?	YesNo	Yes
10	1	Is there a procedure in place to receive notification of a suspected outbreak of a disease immediately after discovery by local health agencies?	YesNo	Yes
11	1	Does the system have a communications procedure in place to use immediately after discovery of contamination?	YesNo	Yes

Security / Management

Data Security:

1	2	Are as-built drawings available?	YesNo	Yes
2	1	Are maps, records, and other information stored in a secure location?	YesNo	Yes
3		How often are maps updated?	Text	None
4		How are maps stored and protected?	Text	None
5	2	Are copies of records, maps, and other sensitive information labeled confidential, and are all copies controlled and returned to the water system?	YesNo	Yes
6	1	Are vehicles locked and secured at all times?	YesNo	Yes
7		Is there an overall operation and maintenance (O&M) manual for the facility?	YesNo	None

QuestionNumber		Sanitary Survey Questions --- ESS Comprehensive	Response Type	Correct Response
8		Are there standard operating procedures (SOPs) at the facility?	YesNo	None
9		Does the system store its information on a computer?	YesNo	None
10	2	Is computer access "password protected?"	YesNo	Yes
11	2	Is virus protection installed and software upgraded regularly, and are the virus definitions updated at least daily?	YesNo	Yes
12	2	Does the system have a plan to back-up computers?	YesNo	Yes
13	1	Is there information on the web that can be used to disrupt the system or contaminate its water?	YesNo	No
14	2	If the system allows Internet bill paying or provides other services over the Internet, does it have a firewall?	YesNo	Yes

Security / Management

Internal and External Communication:

1	1	Is there effective communication between key management staff, operations staff, local and emergency responders, and State emergency personnel?	YesNo	Yes
2		What is the level of cooperation between the system and the Local Emergency Planning Committee (LEPC)?	DropDown	None
3	1	Has the system contacted all individuals who may need to be reached during an emergency?	YesNo	Yes
4	2	Does the system have a neighborhood watch for the water system?	YesNo	Yes
5	2	Has the system management met with local neighbors to enlist their support?	YesNo	Yes
6	2	Have the neighbors been supplied with security information and law enforcement contacts?	YesNo	Yes
7	2	Are the neighbors notified when work is to be undertaken by the system or its contractors to avoid false alarms?	YesNo	Yes
8	1	Has the system communicated with local law enforcement officials?	YesNo	Yes
9	1	Do local law enforcement officials know the system and its physical layout?	YesNo	Yes
10	1	Do they know types of suspicious activity that should be monitored during routine patrol?	YesNo	Yes
11	1	Do they know who to contact at the water system in the event that they see suspicious activity?	YesNo	Yes
12	1	Do they have timely access to keys and codes for locked system components?	YesNo	Yes
13	1	Does the system and specifically the operators know who to contact in the event of emergency?	YesNo	Yes
14	1	Is the Emergency Contact List stored in a place where all authorized personnel can access it?	YesNo	Yes
15	1	Are all operators aware of its existence?	YesNo	Yes
16	2	Do operators know who to contact depending on the nature of the emergency?	YesNo	Yes
17	1	Do water system personnel have a checklist to use for threats or suspicious calls?	YesNoLeadin	Yes
17.01	2	Are checklists available at every telephone?	YesNo	Yes
18	2	Does the system have caller ID on telephones that carry numbers listed in the public directory?	YesNo	Yes

Security / Management

Employees:

1	1	Does the system have adequate staff to handle emergencies?	YesNo	Yes
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QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
2	2	Does the system have access to support staff outside of the water system?	YesNo	Yes
3	2	Can it increase its staff to necessary levels if an emergency occurs?	YesNo	Yes
4	1	Are employees adequately trained in security policies and procedures?	YesNo	Yes
5	2	When hiring personnel, does the system request that local police perform a criminal background check?	YesNo	Yes
6	2	When hiring, does the system verify employment eligibility (as required by the Immigration and Naturalization Service, Form I-9)?	YesNo	Yes
7	2	Are system personnel issued photo-identification cards?	YesNo	Yes
8	1	When terminating employment, does the system require employees to turn in photo IDs, keys, access codes, and other security-related items?	YesNo	Yes
9	1	Does the system use uniforms and vehicles with the system name prominently displayed?	YesNo	Yes
10	1	Have water system personnel been advised to report security vulnerability concerns and to report suspicious activity?	YesNo	Yes

Security / Management

Physical Security:

1	1	Is access to the critical components of the water system (i.e., a part of the physical infrastructure of the system that is essential for water flow and/or water quality) restricted to authorized personnel only?	YesNo	Yes
2		Does the system:	Header	None
2.01	2	Require photo identification cards to be displayed within the restricted area at all times?	YesNo	Yes
2.02	1	Post signs restricting entry to authorized personnel and ensure that assigned staff escort people without proper ID?	YesNo	Yes
2.03	2	Do all signs include a number to call to report suspicious activity?	YesNo	Yes
2.04	2	Prohibit public tours of critical treatment system components.	YesNo	Yes
3	1	Are facilities fenced, including wellhouses and pump pits, and are gates locked where appropriate?	YesNo	Yes
4	1	Do all facilities have a security fence around the perimeter?	YesNo	Yes
5	2	Does the fence meet General Services Administration (GSA)[1] standards for fencing?	YesNo	Yes
6	2	Is the fence perimeter patrolled periodically to check for breaches and maintenance needs?	YesNo	Yes
7	2	Does the system have sensors on exterior fences?	YesNo	Yes
8	2	Are all gates locked with chains and a tamper-proof padlock that at a minimum protects the shank?	YesNo	Yes
9	1	Are doors, windows, and other points of entry such as tank and roof hatches and vents kept closed and locked?	YesNo	Yes
10	1	Are locks checked regularly?	YesNo	Yes
11	2	Are doors and hinges to critical facilities constructed of heavy-duty reinforced material?	YesNo	Yes
12	2	Are hinges on all outside doors located on the inside?	YesNo	Yes
13	2	Are all windows locked and reinforced with wire mesh or iron bars, bolted on the inside.	YesNo	Yes
14	1	Is there external lighting around the critical components of the water system?	YesNo	Yes
15	1	Are warning signs (tampering, unauthorized access, etc.) posted on all critical components of the water system (e.g., well houses and storage tanks)?	YesNo	Yes
16	1	Do all signs include a telephone number to call to report suspicious activity?	YesNo	Yes
17	1	Does the system patrol and inspect source intake, buildings, storage tanks, equipment, and other critical components?	YesNo	Yes

Security / Management**Repairs and Response:**

1	1	Does the system have adequate materials on hand to facilitate repairs?	YesNo	Yes
2	2	Does the system maintain in its inventory two full circle repair bands for each pipe size, two solid couplings for each pipe size, two bell-joint repair clamps, and one length of each type and size of pipe?	YesNo	Yes
3		If repair materials are not available, how many hours would it take to obtain these materials at 2:00 a.m.?	YesNo	None

Distribution / Design

1		What kind of piping materials are in the distribution system?	DropDown	None
2		Do any water lines have dead ends?	YesNoLeadIn	No
2.01		How many dead-ends are in the system?	Numeric	None
3	3	Are there any main lines that have a diameter of less than 3 inches?	YesNo	No
4	2	Do all water mains that provide fire flow have a diameter of at least 6 inches?	YesNo	Yes
5	3	Are there any bottle necks in the piping system? (A small diameter pipe connected on both ends by larger diameter pipe)	YesNo	No
6		Are separate pressure zones provided?	YesNoLeadIn	None
6.01	3	If yes, are there automatic operating pressure regulating valves (PRV's) separating the zones?	YesNo	Yes
7	2	Is there a need for pressure zones?	YesNo	No
8	4	Was asbestos/cement pipe used in the system?	YesNoLeadIn	No
8.01	2	If yes, has asbestos analysis been done?	YesNo	Yes
9	3	Are all materials used in the system manufactured according to ANSI/AWWA Standards?	YesNo	Yes
10	2	Does the system have adequate valves?	YesNo	Yes
11	3	Are air relief valves provided where necessary?	YesNo	Yes
12	3	In cold climates, are all pipes buried below the frost line?	YesNo	Yes
13	3	Are water and sewer (sanitary or storm) mains separated by a horizontal distance of 10 ft. or greater?	YesNo	Yes
14	3	Is there a minimum horizontal distance of 25 ft. between a subsurface disposal system and any water distribution pipe?	YesNo	Yes
15	4	Are cast iron and steel pipe protected from external corrosion?	YesNo	Yes

Security / Sources**General:**

1	1	Does the system have a back-up source of supply in the event that their primary source of water is contaminated or shut down?	YesNo	Yes
2		Is there an interconnection with a neighboring system?	YesNo	None
3	2	Does the system reviews the contract annually to ensure that the neighboring system still has sufficient extra supplies to meet emergency needs?	YesNo	Yes
4	2	Does the system inspect the inter-connection line annually, flush and operate valves at least annually.	YesNo	Yes

Security / Sources**Back-up Sources of Supply / Wells:**

1	2	Does the system routinely run the pump in the back-up well to ensure source is still viable and employees can quickly get the well in service?	YesNo	Yes
2	4	Is the back-up well is in the same aquifer as the primary well?	YesNo	No
3	3	Does the back-up well have a separate source of power from the primary well?	YesNo	Yes

Security / Sources**Back-up Sources of Supply / Bottled Water:**

1	3	Does the system have contracts for tanker trucks or with bottled water companies, stating the required time frame for delivery?	YesNo	Yes
2	2	Is this time frame reflected in the emergency plan?	YesNo	Yes

Security / Sources**Back-up Sources of Supply / Surface Supplies:**

1	1	Does the system have a back-up intake that can be used in the event that the primary intake is damaged or destroyed ? .	YesNo	Yes
2	3	Back-up Transmission Line. If there is a single transmission line from the source to the treatment plant?	YesNo	No

Security / Sources**Protection of Sources / General:**

1	1	Does the system provide adequate protection for its sources and related components?	YesNo	Yes
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Security / Sources**Protection of Sources / Groundwater:**

1	1	Is the source protected by a fence?	YesNoLeadin	Yes
1.01	2	If yes, does it meet General Services Administration (GSA) standards for fencing?	YesNo	Yes
1.02	1	Is it of sufficient height?	YesNo	Yes
1.03	1	Is the bottom secured?	YesNo	Yes
1.04	1	Is the gate locked?	YesNo	Yes
1.05	1	Is the fence in good repair?	YesNo	Yes
1.06	2	Is there a sensor on the gate that will detect a breach of security?	YesNo	Yes
1.07	2	Is the fence line cleared of vegetation?	YesNo	Yes

Security / Sources**Protection of Sources / Surface Supplies:**

1	2	Does the system monitor raw water so that it has a baseline that will allow system operators to know if there has been a contamination incident?	YesNoLeadin	Yes
1.01	2	If yes, is pH monitored?	YesNo	Yes

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
1.02	2	turbidity?	YesNo	Yes
1.03	2	total and fecal coliform?	YesNo	Yes
1.04	2	total organic carbon?	YesNo	Yes
1.05	2	specific conductivity?	YesNo	Yes
1.06	2	ultraviolet adsorption?	YesNo	Yes
1.07	2	color and odor?	YesNo	Yes
1.08		other?	YesNo	None
2		Depending on the size of the watershed and the extent of ownership by the system, how is the rest of the watershed protected?	YesNo	None
3	1	Is the physical protection well-constructed, well-maintained, and in good repair?	YesNo	Yes

Security / Sources

Protection of Sources / Reservoirs and dams:

1		Are reservoirs and dams properly protected?	YesNo	Yes
2		Is the physical protection well-constructed, well-maintained, and in good repair?	YesNo	Yes
3	1	Are reservoirs and dams regularly patrolled?	YesNo	Yes
4	1	Are approaches to the dams and reservoirs locked, lighted, and alarmed?	YesNo	Yes
5	2	Is recreational use banned or restricted?	YesNo	Yes
6	2	Does the system adequately protect its transmission line?	YesNo	Yes
7	2	If there is a single transmission line from the source to treatment?	YesNo	No
8	1	Is the transmission line physically protected against any type of tampering or intrusion?	YesNo	Yes

Security / Sources

Raw water transmission:

1		Are there pump stations along the distribution route prior to treatment?	YesNoLeadIn	None
1.01	1	If so, are these pump sites protected?	YesNo	Yes
2	1	Are there any vulnerable points along the transmission line?	YesNoLeadIn	No
3		Does the system add chemicals prior to the treatment plant?	YesNoLeadIn	None
3.01	1	If yes, are the sites of application secure?	YesNo	Yes
4	1	If chemicals are stored at the sites of application, are they secure?	YesNo	Yes

Security / Sources

Protection of the Watershed or Wellhead:

1	2	Is the watershed or aquifer recharge area protected?	YesNo	Yes
2	2	Does the system have a wellhead protection program or a watershed protection program?	YesNo	Yes
3		Is the protected area:	DropDown	None

QuestionNumber		Sanitary Survey Questions --- ESS Comprehensive	Response Type	Correct Response
4	2	Has the system taken appropriate action to reduce the threat of potential contamination of the watershed?	YesNo	Yes
5	2	If ordinances are used, are they enforced?	YesNo	Yes
6	2	Are there physical restrictions such as full or partial fencing that meets GSA standards?	YesNo	Yes
7	1	Are access roads gated and locked?	YesNo	Yes
8	1	Are the entry points to the water system easily seen?	YesNo	Yes
9	1	Is there an emergency response plan for spills in the water protection area?	YesNo	Yes

Security / Sources

Proper sealing of wells:

1	1	Is the well properly sealed?	YesNo	Yes
2	1	Does the well air vent terminate 18 inches above the ground or floor, or three feet above maximum flood level with return bend facing downward and screened?	YesNo	Yes
3	1	Are well vents and caps screened and securely attached?	YesNo	Yes
4	1	Are the vents and caps checked regularly for signs of tampering or other unusual entry?	YesNo	Yes
5	1	Is the upper termination of the well protected?	YesNo	Yes
6	1	Is the well cover locked?	YesNo	Yes
7	1	Are the wells inspected frequently to observe evidence of tampering?	YesNo	Yes
8	1	Are the well houses kept clean and free of hazardous and flammable materials?	YesNo	Yes
9	1	Are observation/test and abandoned wells properly secured to prevent tampering?	YesNo	Yes
10	1	Are there abandoned wells that have not been properly plugged and sealed?	YesNo	No

Distribution / Records & Plans

1	3	Is an adequate map maintained of the distribution system?	YesNo	Yes
2	3	Are the maps updated as changes to the system are made?	YesNo	Yes
3	4	Are distribution system problem areas identified on a system map?	YesNo	Yes

Security / Pumping

Pumps, Motors and Appurtenances:

1	1	Does the system have an contingency plan for dealing with failure of critical pumps or pumping stations?	YesNo	Yes
2	1	Are back-up pumps and equipment available?	YesNoLeadin	Yes
2.01	1	If so, are they stored in a separate location from the critical pumping stations?	YesNo	Yes
3	2	If critical pumps fail to operate, are operators notified of this by an telephone dialer or similar automatic system?	YesNo	Yes
4	2	If no, is there a local alarm system and do area residents know to call the system in the event that it activates?	YesNo	Yes
5		Does the system control pumps through a SCADA system?	YesNoLeadin	None

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
5.01	1	If yes, if the SCADA system is down, can personnel operate the system manually?	YesNo	Yes
5.02	2	Is the SCADA system co-located with the pumps?	YesNo	No

Security / Pumping

Auxiliary Power Unit (APU):

1		Does the system have auxiliary power?	YesNo	None
2	2	Is the auxiliary power unit exercised and tested regularly and properly?	YesNo	Yes
3	3	Does the system keep records of APU exercising?	YesNoLeadin	Yes
3.01	3	Do these records include engine and generator gauge readings?	YesNo	Yes

Distribution / Construction

1	3	Are proper bedding and backfill procedures used with new or repaired pipes?	YesNo	Yes
2	3	Are concrete thrust blocks or restraining fittings used at all elbows, tees and dead ends?	YesNo	Yes
3	3	Are pressure and/or leak tests performed on all new pipe construction?	YesNo	Yes

Security / Treatment

Delivery of Chemicals:

1	1	Are deliveries of chemicals and other supplies made in the presence of water system personnel?	YesNo	Yes
2	1	Are there specific procedures in place to handle chlorine gas, as it is extremely poisonous?	YesNo	Yes
3	1	Has the system discussed with its supplier(s) procedures to ensure the security of their products?	YesNo	Yes
4	2	Does the system verify that suppliers take precautions to ensure that their products are not contaminated?	YesNo	Yes
5	2	Are there chain of custody procedures for delivery of chemicals?	YesNo	Yes
6	1	Does a designated system employee inspect chemicals and other supplies at the time of delivery to verify they are sealed and match water system purchase orders?	YesNo	Yes
7	2	Does the system keep a log or journal of deliveries?	YesNoLeadin	Yes
7.01	1	Does the log include the driver's name (taken from the driver's photo ID), date, time, material delivered, and the supplier's name?	YesNo	Yes

Security / Treatment

Chemical Treatment:

1	1	Is the operator aware of possible adverse effects of chemical overfeed?	YesNo	Yes
2	1	Can the operators properly respond to emergency chemical addition situations?	YesNo	Yes
3	1	Do daily operating records reflect chemical dosages and total quantities used?	YesNo	Yes
4	2	Does the operator monitor daily chemical use and dose rates, as well as remaining chemicals in stock?	YesNo	Yes
5	1	Do the operators know where all of the chemical application points are and which points are being utilized?	YesNo	Yes
6	1	Do the operators record the amount of chemical fed?	YesNo	Yes

QuestionNumber		Sanitary Survey Questions --- ESS Comprehensive	Response Type	Correct Response
7	1	Do the operators conduct daily O&M inspections?	YesNoLeadin	Yes
7.01	1	Does this include checking the valve position for each chemical application point to ensure that chemicals are being injected at appropriate locations?	YesNo	Yes
8		Does the system add chemicals beyond the treatment plant to maintain adequate levels of residuals in the distribution system?	YesNoLeadin	None
8.01	1	If yes, are the points of application and the chemicals at those sites locked or otherwise secured?	YesNo	Yes
9	1	Does the system monitor treated water beyond the chemical addition point so that it has a baseline that will allow system operators to know if there has been a contamination incident?	Header	Yes
9.01	1	pH	YesNo	Yes
9.02	1	turbidity	YesNo	Yes
9.03	1	total and fecal coliform	YesNo	Yes
9.04	1	total organic carbon	YesNo	Yes
9.05	1	specific conductivity	YesNo	Yes
9.06	1	ultraviolet adsorption	YesNo	Yes
9.07	1	color and odor	YesNo	Yes
9.08		other	YesNo	None
10	1	Is chemical storage secure and safe?	YesNo	Yes
11	1	Are incompatible chemicals (i.e., chemicals that can react and cause harmful effects) stored apart? .	YesNo	Yes

Security / Treatment

Gas Chlorination:

1	1	If chlorine gas is used, has the system considered alternatives to chlorine gas?	YesNo	Yes
2	1	Is the chlorine storage area located in a high population density area?	YesNo	No
3	1	Is the chlorine gas kept in a secure area?	YesNo	Yes
4	1	Is access to the chlorine gas supply limited and tightly controlled?	YesNo	Yes
5	2	Has the system coordinated security considerations with their supplier of chlorine gas?	YesNo	Yes
6	2	Is the system aware of the kinds of security procedures that the supplier follows and are they adequate?	YesNo	Yes
7	1	Does the manufacturer ensure the safety and integrity of its chlorine gas shipments?	YesNo	Yes
8	2	Does the supplier tell the system what kind of vehicle will deliver the shipment?	YesNo	Yes
9	2	Does the system verify that the driver is the same driver that the supplier dispatched by checking the driver's license?	YesNo	Yes
10	2	Does the system have special measures in place for the delivery of chlorine gas?	YesNo	Yes
11	2	Does the system follow any chemical delivery procedures in addition to the system's standard procedures due to the dangers associated with chlorine gas?	YesNo	Yes
12	1	Are the shipments ever left alone during delivery?	YesNo	No
13	2	Are containers checked to verify they are all sealed?	YesNo	Yes
14	2	Are all deliveries matched to a purchase order to ensure that they are, in fact, what the system ordered?	YesNo	Yes

QuestionNumber		Sanitary Survey Questions --- ESS Comprehensive	Response Type	Correct Response
15	2	Does the system keep a log of all deliveries?	YesNo	Yes
16	1	Can the system adequately detect, respond to, and immediately control a gas leak?	YesNo	Yes
17	1	Are chlorine gas leaks detected by an automatic continuously operated system that is connected to an alarm system?	YesNoLeadin	Yes
17.01	2	Are automatic detectors tested at least monthly?	YesNo	Yes
17.02	1	Is the detection level set on the low range (1 ppm)?	YesNo	Yes
18	1	Are there adequate leak containment provisions?	YesNo	Yes
19	1	Is the chlorination equipment properly contained?	YesNo	Yes
20	1	Is there an alarm tied to interruptions in the chlorine feed?	YesNoLeadin	Yes
20.01	1	Does the alarm also shut down the flow of water?	YesNo	Yes
21	3	Is there a risk management plan?	YesNoLeadin	Yes
21.01		Has the risk management plan been implemented?	YesNo	Yes
22	2	Has a Process Hazard Analysis been performed?	YesNo	Yes

Distribution / Pressure/Flow

1	3	Does the system maintain a minimum working pressure of 35 psi and a normal working pressure of 60 psi measured at the consumer's tap?	YesNo	Yes
2	2	Is the PWS capable of providing sufficient water during maximum hourly demand conditions (including fire flow) to maintain a minimum pressure of 20 psi within the system measured at the consumer's tap?	YesNo	Yes
3	2	Are there areas with chronic low pressure problems?	YesNo	No
4	3	Is the fire flow adequate?	YesNo	Yes
5	2	Is system pressure monitored and recorded at high and low elevations and at the farthest distance from the pressure source?	YesNo	Yes
6		How often are pressure readings taken in the distribution system?	DropDown	None
7	2	If there are pressure zones controlled by automatic Pressure Regulating Valves (PRVs), do they work properly?	YesNo	Yes
8	3	If there are PRVs, can the operator describe how they work and what they do?	YesNo	Yes
9	3	Does the operator regularly record pressure readings on both sides of the PRV?	YesNo	Yes
10	3	If a PRV should fail, is there a system in place that will automatically notify the operator?	YesNo	Yes
11	4	Is there is a computer-aided hydraulic model of the distribution system?	YesNoLeadin	Yes
11.01	4	If yes, has it been calibrated to actual conditions?	YesNo	Yes
11.02		When was it last updated?	Date	None
11.03	2	Does it show any low pressure conditions?	YesNo	No

Security / Storage

Emergency Procedures:

1	1	Are there procedures established for detection and response to tank contamination situations?	YesNo	Yes
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Security / Storage**Storage Capacity:**

1	1	Is the storage capacity sufficient to maintain adequate supply and pressure to the distribution system in the event that the source of supply to the tank(s) is temporarily interrupted?	YesNo	Yes
2	1	Can the tank be isolated from the system?	YesNo	Yes
3	1	Have the valves have been exercised regularly?	YesNo	Yes
4	1	Is there a sampling tap on the storage tank outlet to test water in the tank for possible contamination?	YesNo	Yes
5	1	Are procedures established to sustain the water supply when the storage tank is out of service?	YesNo	Yes
6	2	Are temporary measures established, tested, and practiced thoroughly?	YesNo	Yes
7	2	Are all water system customers and the fire department notified of the testing in advance so that conservation and alternative plans can be made to decrease stress on the water system?	YesNo	Yes

Security / Storage**Physical Security:**

1	1	Is the site protected against unauthorized entry?	YesNo	Yes
2	2	Is the storage site fenced, lighted, and alarmed to prevent unauthorized entry?	YesNo	Yes
3	1	Are ladders to tops of storage tanks terminated at least ten feet above the ground to deter unauthorized climbing?	YesNo	Yes
4	1	Does the system restrict access to the storage tank?	YesNo	Yes
5	1	Is all treated water storage covered?	YesNo	Yes
6	1	Are covers watertight, made of permanent material, and constructed to drain freely?	YesNo	Yes
7	1	Is the surface of a storage tank or cover used for any purpose that may result in contamination of the stored water?	YesNo	No
8	1	Is the roof-to-sidewall joint sealed?	YesNo	Yes
9	1	Is the top access hatch designed correctly and does it close tightly? Are the hatches locked?	YesNo	Yes
10	1	Are access hatches closed with a solid watertight cover and a sturdy locking device?	YesNo	Yes
11	2	Is there an electronic tampering system on the hatch that will alert system personnel to potential intrusion?	YesNo	Yes
12	1	Are control systems reliable and properly protected?	YesNo	Yes
13	1	Are tank water level control systems equipped with a manual override, a pump failure and low water level alarm system?	YesNo	Yes
14	1	Are they adequately protected from unauthorized visitors and other outside elements?	YesNo	Yes
15	1	Are overflow pipes and air vents screened?	YesNo	Yes
16	1	Are the screens are kept in good repair?	YesNo	Yes
17	1	Are regular patrols performed to check that all screens are in good repair and report any damaged screens?	YesNo	Yes

Distribution / Cross-Connections

1	2	Are there cross-connections in the distribution systems which are owned or controlled by the water system?	YesNo	No
2	2	Are there any cross-connections between the distribution system and any pipes, pumps, hydrants, or tanks whereby unsafe water or other contaminating materials may be discharged or drawn into the system?	YesNo	No
3	2	Does the water system have a program to control the use of fire hydrants?	YesNo	Yes
4	2	Are blow offs connected to sanitary or storm sewers or do they exit below flood level in ditches or streams?	YesNo	No
5		Is potable water used for geothermal systems or heat exchangers?	YesNoLeadin	None
5.01	2	If yes, is the distribution system protected from contamination and designed to prevent contamination?	YesNo	Yes
6	2	Does the discharge piping on all air relief valves extend a proper distance above ground and flood level?	YesNo	Yes
	2	Are the backflow prevention devices installed and tested at each site where backflow could cause a reduction in water quality?	YesNo	Yes
7	3	Are backflow preventers installed with isolation valves to facilitate removal and maintenance?	YesNo	Yes
8	2	Are any RPZ devices installed in a pit?	YesNo	No
9	2	Are RPZ drains provided with a suitable air gap?	YesNo	Yes

Security / Distribution**Water Quality:**

1	1	Is there any point in the system where pressure drops below 20 psi during peak demand or fire response?	YesNo	No
2	1	Is there a program to regularly monitor pressures throughout the system?	YesNo	Yes
3	3	If there is a hydraulic model, has it been compared to actual conditions?	YesNoLeadin	Yes
3.01		When was it last updated?	Date	None
3.02	2	Does it show any low pressure conditions?	YesNo	No
3.03	2	Does the model accurately represents actual system data?	YesNo	Yes

Security / Distribution**Repair and Response:**

1	2	Is there a line flushing program?	YesNoLeadin	Yes
1.01	2	Is a systematic unidirectional process used?	YesNo	Yes
1.02	3	Are records maintained of frequency, location, and amount of time required?	YesNo	Yes
2	2	Are isolation valves regularly inspected and exercised, and are records maintained?	YesNo	Yes
3	1	Are there a sufficient number of isolation valves and blow off valves to effectively shut off and contain affected sections of the distribution system in the case of a contamination event?	YesNo	Yes
4	2	Are there written procedures for isolating portions of the system and making main repairs?	YesNo	Yes

Security / Distribution**Distribution System Monitoring:**

1	1	Is there an adequate free chlorine residual maintained at all sampling points throughout the entire system?	YesNo	Yes
2	1	Is there a procedure to increase chlorine residual in the system in the event of an emergency?	YesNo	Yes
3	1	Does the system monitor water in the distribution system so that it has a baseline that will allow system operators to know if there has been a contamination incident?	Header	Yes
3.01	1	pH	YesNo	Yes
3.02	2	turbidity	YesNo	Yes
3.03	1	total and fecal coliform	YesNo	Yes
3.04	2	total organic carbon	YesNo	Yes
3.05	2	specific conductivity	YesNo	Yes
3.06	2	ultraviolet adsorption	YesNo	Yes
3.07	1	color and odor	YesNo	Yes
3.08	1	chlorine residual	YesNo	Yes
4	1	Are there an adequate number of residual sampling sites, and do they provide a representative sample of system conditions?	YesNo	Yes
5	1	Are customer water quality complaints aggressively investigated?	YesNo	Yes
6	1	Is there a procedure in place to respond immediately to a customer complaint about a new taste, odor, color, or other physical change (oily, filmy, burns on contact with skin)?	YesNo	Yes

Distribution / Disinfection

1	2	Are chlorine residuals tested at least daily in the distribution system?	YesNo	Yes
2	2	Is the residual at least 0.2 mg/L prior to the first customer?	YesNo	Yes
3	2	Is at least a trace of residual maintained at all points in the distribution system?	YesNo	Yes
4	2	Are there an adequate number of sample sites and do they provide a representative sample of system conditions?	YesNo	Yes
5		What disinfection procedure is used for new lines?	Text	None
6		What disinfection procedure is used during repairs of broken lines?	Text	None
7	2	Do water main disinfection procedures meet the AWWA C-601 Standard?	YesNo	Yes
8	3	Does the utility use proper safety procedures for handling line disinfection chemicals?	YesNo	Yes

Security / Cross-Connections

1	1	Does the water system have a written cross connection control program?	YesNo	Yes
2		Does the cross connection control program include:	Header	None

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
2.01	1	Authority to establish a program?	YesNo	Yes
2.02	1	Technical provisions?	YesNo	Yes
2.03	1	Right of entry and inspections?	YesNo	Yes
2.04	1	Device testing and repair?	YesNo	Yes
2.05	1	Certified testers?	YesNo	Yes
2.06	1	Plan review and inspection of new construction?	YesNo	Yes
2.07	1	Is the program active in controlling cross connections?	YesNo	Yes
3	1	Are there cross-connections in facilities that are owned by the water utility?	YesNo	No
4	1	Are there backflow prevention devices installed and tested at each commercial site where backflow could cause a reduction in water quality?	YesNo	Yes
5	1	Does the water system have a program to control the use of fire hydrants?	YesNo	Yes
6	1	Are there procedures to detect and report unauthorized use of fire hydrants?	YesNo	Yes
7	2	Does the local police department have a program in place to spot facilities in the community such as warehouses or abandoned buildings?	YesNoLeadin	Yes
7.01		If yes, is the water system advised on these facilities?	YesNo	Yes

Distribution / Maintenance

1	3	Is there a valve exercising program?	YesNoLeadin	Yes
1.01		If yes, how often are the valves exercised?	DropDown	None
1.02	4	Is the number of turns required to close and open the valve recorded?	YesNo	Yes
2	3	Is there a water main flushing program?	YesNoLeadin	Yes
2.01	3	If yes, is a systematic and unidirectional process used?	YesNo	Yes
2.02	3	Is there a written set of procedures for conducting unidirectional flushing?	YesNo	Yes
2.03		How frequently is unidirectional flushing performed?	Numeric	None
3	2	Are all dead end water mains equipped with a means to flush the line?	YesNo	Yes
4	3	Are dead end water mains flushed at least semiannually?	YesNo	Yes
5		Is there a fire hydrant testing program, separate from the line flushing program?	YesNoLeadin	None
5.01	3	If yes, does the system oversee this testing?	YesNo	Yes
6	4	Is there a leak detection program?	YesNo	Yes
7	4	Does the system have equipment for line location and leak detection?	YesNo	Yes

Distribution / Repairs

1		What is the frequency of main breaks per year?	Numeric	None
2		Are the breaks primarily in one area?	YesNoLeadin	None

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
2.01		What type of pipe is involved?	DropDown	None
3		Does the utility perform their own water line repairs?	YesNoLeadin	None
3.01	3	If yes, do they have adequate equipment and repair materials in stock?	YesNo	Yes
4	3	If contractors perform repairs do they respond in a reasonable amount of time?	YesNo	Yes
5	3	Does the system maintain in its inventory (at a minimum) two full circle repair bands for each pipe size, two solid couplings for each pipe size, two bell-joint repair clamps, and one length of each type and size of pipe?	YesNo	Yes
6	3	If repair materials are not kept in stock, can they be obtained in a reasonable amount of time?	YesNo	Yes
7	4	Are there written procedures for isolation of portions of the system and for making main repairs?	YesNo	Yes

Distribution / Safety

1		Are any valves or meters in vaults?	YesNoLeadin	None
1.01	4	If yes, can the operator observe gauge readings and perform a visual inspection without entering the vault?	YesNo	Yes
1.02	3	Are there signs identifying them as a confined spaces?	YesNo	Yes
1.03	3	Does the operator have and use gas monitoring equipment and follow a confined space entry procedure?	YesNo	Yes
2	3	Is ventilation provided in all rooms, compartments, pits and other enclosures where unsafe atmosphere may develop or where excessive heat may be?	YesNo	Yes
3	3	Are all confined space entry procedures done in accordance with OSHA requirements?	YesNo	Yes
4	3	Are excavation safety practices in place and followed?	YesNo	Yes
5	3	Is there a trained and competent person on staff for excavation projects?	YesNo	Yes
6	3	Does the utility have and use cave-in protection equipment?	YesNo	Yes
7	3	Are traffic control safety practices in place and followed?	YesNo	Yes
8	3	Does the utility have and do they use proper traffic control equipment?	YesNo	Yes
9	3	Have all field workers been trained in the use of traffic control equipment?	YesNo	Yes

Storage / General

1	2	Are there provisions established for maintaining the water supply when the storage tank is out of service for maintenance?	YesNo	Yes
2	2	Are there provisions designed in for draining and cleaning of the storage tank?	YesNo	Yes
3		Are the storage structure and protective coatings approved by an ANSI accredited organization?	YesNo	Yes
4	3	Is there a maintenance program for storage tanks?	YesNo	Yes
5	3	Are all confined space entry procedures done in accordance with OSHA requirements?	YesNo	Yes
6	3	Is ventilation provided in all rooms, compartments, pits and other enclosures where unsafe atmosphere may develop or where excessive heat may be?	YesNo	Yes

Storage / Gravity**Design:**

1	3	Does the total storage on the system provide between 1 and 3 days of storage as compared to the average daily demand?	YesNo	Yes
2	3	Is the storage capacity equal to or greater than the average daily consumption?	YesNo	Yes
3		Is the storage system designed for direct pumping or floating on the distribution system?	DropDown	None
4		If designed to allow both modes, in which mode is it being operated?	DropDown	None
5	2	If operated in the "floating mode," is the tank volume included in the calculation for disinfectant contact time?	YesNo	No
6	2	Is the elevation of the tank sufficient to maintain distribution pressure throughout the system?	YesNo	Yes
7	2	Is the storage structure designed so that it can be isolated from the distribution system without necessitating loss of pressure in the distribution system?	YesNo	Yes
8	2	Is storage structure safely accessible to the inspector and operator?	YesNo	Yes
9	2	Is the storage structure secure from unauthorized access?	YesNo	Yes
10	2	Is the site protected against vandalism?	YesNo	Yes
11	2	Is the storage structure protected against flooding?	YesNo	Yes
12	3	Is the area surrounding the ground-level storage structure graded in a manner that will prevent surface water from standing within 50 feet of it?	YesNo	Yes
13	3	Is the bottom of the storage reservoir constructed a minimum of 4 feet above the high ground water table?	YesNo	Yes
14	2	Is the storage structure adequately protected from potential sources of contamination?	YesNo	Yes
15	3	Are all sewer lines outside a minimum 50 foot boundary from an in-ground storage tank?	YesNo	Yes
16	3	Does the catwalk over finished water in a storage structure have a solid floor with raised edges?	YesNo	Yes
17	2	Does the storage reservoir have a watertight roof or cover and is it sloped so that water will drain?	YesNo	Yes
18	4	If tank is steel, is it protected against corrosion?	YesNo	Yes
19	3	In cold climates, is the tank protected against icing?	YesNo	Yes
20		Is storage structure lined?	YesNoLeadin	None
20.01		If yes, liner type:	YesNo	Yes
20.02	2	Is the liner approved by an ANSI accredited organization?	YesNo	Yes

Storage / Gravity**Components:**

1	2	Is all treated water storage covered?	YesNo	Yes
2	2	Does the tank appear to be structurally sound?	YesNo	Yes
3		Is cathodic protection provided?	YesNoLeadin	None
3.01	2	If yes, are the cathodic protection access plates watertight?	YesNo	Yes
3.02	4	Are cathodic protection rods in good condition?	YesNo	Yes

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
3.03		Date cathodic rods were last changed.	Date	None
4		Are overflow pipes:	Header	None
4.01	3	Terminated 12 to 24 inches above the ground?	YesNo	Yes
4.02	3	Screened or fitted with a flapper gate?	YesNo	Yes
4.03	2	Directly connected to a storm sewer or sanitary sewer?	YesNo	No
5		Are air vents:	Header	None
5.01		Turned downward or covered from rain?	YesNo	Yes
5.02	3	Terminated at a minimum of 3 diameters above the surface of storage tank roof?	YesNo	Yes
5.03	2	Screened?	YesNo	Yes
6		Are access opening covers overlapping, water tight, and greater than or equal to four inches above the tank roof surface?	YesNo	
7	2	Are outside access hatches locked?	YesNo	Yes
8	3	Is there a roof penetration for a water level indicator cable, if so does the cable pass through a tight-fitting grommet?	YesNo	Yes
9	2	Are there other roof penetrations, if so, are they sealed?	YesNo	Yes
10	4	Do all elevated tanks with riser pipes over eight inches in diameter have protective bars over the riser openings inside the tank?	YesNo	Yes
11	3	Do all water storage structures have ladders, ladder guards, balcony railings, and safely located entrance hatches provided where applicable?	YesNo	Yes
12	3	Are ladders to tops of storage tanks terminated at least ten feet above the ground to deter unauthorized climbing?	YesNo	Yes
13	3	Is there a climbing harness or other OSHA approved safety system available for accessing the top and interior of the tank for inspection and maintenance?	YesNo	Yes

Storage / Gravity

Operation:

1	2	Do storage tanks turn over at least once every 14 days?	YesNo	Yes
2	3	Is the tank being filled to capacity during automatic fill cycles?	YesNo	Yes
3	2	Are instruments and controls adequate and operational?	YesNoLeadin	Yes
3.01	2	Are they being utilized and maintained?	YesNo	Yes
4	3	Does the operator understand what controls the water level or pressure in the tank and how to make adjustments?	YesNo	Yes
5	2	Does low pressure level provide adequate pressure throughout the distribution system?	YesNo	Yes
6	3	If the tank is a wooden tank, is it operated in a manner to minimize an increase in bacterial count?	YesNo	Yes

Storage / Gravity

Maintenance:

1	2	Are there cracks in the walls or covers of the in-ground concrete storage tanks?	YesNo	No
2	3	Is the storage structure interior coating or liner peeling or cracked?	YesNo	No
3		What is the frequency of interior inspection and cleaning?	Text	None

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
4	3	Is this adequate?	YesNo	Yes
5		What is the frequency of structural/protective coating inspections?	Text	None
6	4	Is this adequate?	YesNo	Yes
7	4	Are the structural / protective coating inspections done by a NACE certified inspector and in accordance with AWWA Standard D101?	YesNo	Yes
8	2	Is VOC and coliform testing performed after painting?	YesNo	Yes
9	2	Following interior inspection / maintenance activities and before tanks are returned to service, are tanks disinfected in accordance with AWWA Standard C-652?	YesNo	Yes
10	2	Is leakage evident at time of inspection?	YesNo	No
11	2	Are there provisions designed in for draining and cleaning of the storage tank?	YesNo	Yes
12	2	Are there provisions established for maintaining the water supply when the storage tank is out of service for maintenance?	YesNo	Yes
13	3	Are safety precautions followed for climbing tanks?	YesNo	Yes

Storage / Clear-Well

Design:

1	3	Is the clear-well constructed with baffles?	YesNo	Yes
2		Is the finished water stored or conveyed in a compartment that shares a common wall with a compartment used to store or convey unsafe water?	YesNo	No
3	2	Is the storage structure protected against flooding?	YesNo	Yes
4	3	Is the area surrounding the ground-level storage structure graded in a manner that will prevent surface water from standing within 50 feet of it?	YesNo	Yes
5	3	Is the bottom of the storage reservoir constructed a minimum of 4 feet above the high ground water table?	YesNo	Yes
6	2	Is the storage structure adequately protected from potential sources of contamination?	YesNo	Yes
7	3	Are all sewer lines outside a minimum 50 foot boundary from an in-ground storage tank?	YesNo	Yes
8	2	Is storage structure safely accessible to the inspector and operator?	YesNo	Yes
9	3	Does the catwalk over finished water in a storage structure have a solid floor with raised edges?	YesNo	Yes
10	2	Does the storage reservoir have a watertight roof or cover and is it sloped so that water will drain?	YesNo	Yes
11	4	For steel tanks, is it protected against corrosion?	YesNo	Yes
12	3	In cold climates, is the tank protected against icing?	YesNo	Yes
13		Is storage structure lined?	YesNoLeadIn	None
13.01		If yes, liner type:	YesNo	Yes
13.02	2	Is the liner approved by an ANSI accredited organization?	YesNo	Yes
14	2	Is the storage structure secure from unauthorized access?	YesNo	Yes
15	2	Is the site protected against vandalism?	YesNo	Yes

Storage / Clear-Wells**Components:**

1	2	Does the tank appear to be structurally sound?	YesNo	Yes
2	2	Is all treated water storage covered?	YesNo	Yes
3	2	Are water level / pressure control systems reliable and properly protected?	YesNo	Yes
4	3	Is the water level indicator accurate?	YesNo	Yes
5		Are overflow pipes:	Header	None
5.01	3	Terminated 12 to 24 inches above the ground?	YesNo	Yes
5.02	3	Screened or fitted with a flapper gate?	YesNo	Yes
5.03	2	Directly connected to a storm sewer or sanitary sewer?	YesNo	No
5.04	4	Splash pad provided?	YesNo	Yes
6		Are air vents:	Header	None
6.01	2	Turned downward or covered from rain?	YesNo	Yes
6.02	3	Terminated at a minimum of 3 diameters above the surface of storage tank roof?	YesNo	Yes
6.03	2	Screened?	YesNo	Yes
7		Are access opening covers overlapping, water tight, and greater than or equal to four inches above the tank roof surface?	YesNo	
8	2	Are outside access hatches locked?	YesNo	Yes
9	3	Is there a roof penetration for a water level indicator cable, if so does the cable pass through a tight-fitting grommet?	YesNo	Yes
10	2	Are there other roof penetrations, if so, are they sealed?	YesNo	Yes

Storage / Clear-Wells**Operation:**

1	2	Are instruments and controls adequate and operational?	YesNoLeadin	Yes
1.01	2	Are they being utilized and maintained?	YesNo	Yes
2	3	Does the operator understand what controls the water level or pressure in the tank and how to make adjustments?	YesNo	Yes
3	2	Does low pressure level provide adequate pressure throughout the distribution system?	YesNo	Yes

Storage / Clear-Wells**Maintenance:**

1	3	Are safety precautions followed for climbing tanks?	YesNo	Yes
2	2	Are there cracks in the walls or covers of the in-ground concrete storage tanks?	YesNo	No
3	3	Is the storage structure interior coating or liner peeling or cracked?	YesNo	No
4		What is the frequency of interior inspection and cleaning?	DropDown	None
5	3	Is this adequate?	YesNo	Yes

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
6		What is the frequency of structural/protective coating inspections?	DropDown	None
7	4	Is this adequate?	YesNo	Yes
8	4	Are the structural / protective coating inspections done by a NACE certified inspector and in accordance with AWWA Standard D101?	YesNo	Yes
9	2	Is VOC and coliform testing performed after painting?	YesNo	Yes
10	2	Following interior inspection / maintenance activities and before tanks are returned to service, are tanks disinfected in accordance with AWWA Standard C-652?	YesNo	Yes
11	2	Is leakage evident at time of inspection?	YesNo	No
12	2	Are there provisions established for maintaining the water supply when the storage tank is out of service for maintenance?	YesNo	Yes
13	2	Are there provisions designed in for draining and cleaning of the storage tank?	YesNo	Yes

Storage / Hydropneumatic

Design:

1	3	Is the tank located above the ground surface and completely housed?	YesNo	Yes
2	4	Is the gross volume of the tank, in gallons, at least 10 times the capacity of the largest pump, rated in gallons per minute?	YesNo	Yes
3	2	Are back-up systems provided?	YesNo	Yes
4	2	Does the tank have bypass piping to permit operation of the system while it is being repaired or painted?	YesNo	Yes
5		Does the tank have the following:	Header	None
5.01	3	A drain?	YesNo	Yes
5.02	3	An access manhole (24 inches in diameter where practical)?	YesNo	Yes
5.03	2	Pressure gauge?	YesNo	Yes
5.04	3	Water sight glass?	YesNo	Yes
5.05	3	Automatic or manual air blow-off?	YesNo	Yes
5.06	2	Automatic pressure relief valve?	YesNo	Yes
5.07	2	Automatic vacuum relief valve?	YesNo	Yes
5.08	3	Means to add air?	YesNo	Yes
5.09	2	Pressure operated start-stop controls for the pumps?	YesNo	Yes

Storage / Hydropneumatic

Components:

1	2	Are the tank and controls properly protected?	YesNo	Yes
2	3	Is the water level indicator accurate?	YesNo	Yes
3	3	Are the interior and exterior surfaces in good condition?	YesNo	Yes
4	2	Are tank supports adequate and structurally sound?	YesNo	Yes
5	3	If provided, is the outside hatch in good condition?	YesNo	Yes

6	2	Is the recharge air free of pollutants such as oil from an air compressor?	YesNo	Yes
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Storage / Hydropneumatic**Operation:**

1	3	Is the water to air ratio between 1:1 and 2:1?	YesNo	Yes
2	3	Does the supply pump cycle between 30 psi (cut-in point) and 70 psi (cut-out point)?	YesNo	Yes
3	2	Are procedures established for maintaining system pressure during periods when the tank is out of service?	YesNo	Yes
4	3	Does the operator understand what controls the water level or pressure in the tank and how to make adjustments?	YesNo	Yes
5	2	Does low pressure level provide adequate pressure throughout the distribution system?	YesNo	Yes

Storage / Hydropneumatic**Maintenance:**

1	2	Are there provisions designed in for draining and cleaning of the storage tank?	YesNo	Yes
2	2	Are there provisions established for maintaining the water supply when the storage tank is out of service for maintenance?	YesNo	Yes
3	2	Is leakage evident at time of inspection?	YesNo	No

Management / General

1	4	Are administrators familiar with SDWA requirements and system needs?	YesNo	Yes
2	4	Does the utility maintain an updated list of critical customers?	YesNo	Yes
3	3	Are customer water quality complaints recorded?	YesNoLeadin	Yes
3.01	3	Are complaints responded to immediately?	YesNo	Yes
4	2	Have any major complaints been received since the last sanitary survey? If yes, list in comments section.	YesNo	No
5	4	Does the utility track finances, operational data and maintenance practices on a computer?	YesNo	Yes
6		What percentage of the customers' connections are metered?	Numeric	None
7	3	Is there more than 15% of unaccounted-for-water?	YesNo	No
8	4	Is a water conservation program in effect?	YesNo	Yes
9	4	Does the utility have a corrosion control program?	YesNo	Yes

Management / Planning**General:**

1	4	Is there a formal and adequate planning process?	YesNo	Yes
2	4	Is there a master plan showing proposed construction and or replacement of lines?	YesNo	Yes

Management / Planning**Source Water:**

1	2	Has a Source Water Assessment Plan (SWAP) been completed?	YesNo	Yes
2	2	Has a Source Water Protection Plan (SWPP) been developed?	YesNo	Yes
3	2	Is the plan being implemented according to schedule?	YesNo	Yes
4	3	Is the plan available to the PWS operator?	YesNo	Yes

Management / Planning**Emergency:**

1		Does the PWS have a workable written emergency response plan that addresses the following situations:	Header	None
1.01	3	Severe storms?	YesNo	Yes
1.02	3	Flood?	YesNo	Yes
1.03	3	Freezing?	YesNo	Yes
1.04	3	Fire?	YesNo	Yes
1.05	2	Power outage?	YesNo	Yes
1.06	3	Chemical contamination of the water supply?	YesNo	Yes
1.07	3	Bacterial contamination of the water supply?	YesNo	Yes
1.08	3	Chemical spills?	YesNo	Yes
1.09	2	Chlorine gas leak?	YesNo	Yes
1.1	2	Loss of water supply?	YesNo	Yes
1.11	2	Loss of water pressure?	YesNo	Yes
1.12	3	Other	YesNo	None
2	3	Are copies of the emergency response plan available to all critical personnel?	YesNo	Yes
3	3	Is there an Emergency Contact List for the Emergency Response Plan?	YesNo	Yes
4	3	Does the system have adequate staff to handle emergencies?	YesNo	Yes
5	3	Is implementation of the emergency response plan practiced on a regular basis to ensure that it is workable?	YesNo	Yes
6	4	Is the level of cooperation between the system and the local fire and police departments adequate?	YesNo	Yes
	3	Does the system review any water interconnection contracts annually to ensure that the neighboring system still has sufficient extra supplies to meet emergency needs?	YesNo	Yes

Management / Policies**General:**

1		Has the water system established and does it maintain the following?:	Header	None
1.01	4	Written Policy Documents?:	YesNo	Yes

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
1.02	3	Systems Operations Manual or Policy?	YesNo	Yes
1.03	4	Board Governance Policy or By-laws?	YesNo	Yes
1.04	4	Personnel Policy?	YesNo	Yes
1.05	4	Safety or Risk Management Policy?	YesNo	Yes
1.06	4	Customer Service Policy?	YesNo	Yes

Management / Policies

Cross-Connections:

1	2	Does the water system have a written cross-connection control program?	YesNo	Yes
2		Does the cross connection control program include the following? (Community PWSs only)	Header	None
2.01	2	Required installation and operation of adequate backflow prevention devices?	YesNo	Yes
2.02	2	Plan review and inspection of new construction?	YesNo	Yes
2.03	2	Right-of-entry for inspections?	YesNo	Yes
2.04	2	A cross connection inspection conducted annually at all high-risk facilities including industries, commercial establishments, and institutions?	YesNo	Yes
2.05	2	An annual inspection by a certified tester conducted for all installed backflow prevention devices?	YesNo	Yes
2.06	2	Discontinuance of service to any facility where suitable backflow prevention has not been provided for a cross connection?	YesNo	Yes
3	2	Is the program active and effective in controlling cross-connections?	YesNo	Yes
4	2	Are backflow preventers at treatment plants and other facilities owned by the water system tested annually?	YesNo	Yes
5	2	Are all backflow prevention devices third party approved?	YesNo	Yes
6	2	Is the O&M staff trained in cross connection control?	YesNo	Yes

Management / Communications

1	3	Is there effective communication with the water system customers?	YesNo	Yes
2	3	Is there effective communication between key management staff, operations staff and the state enforcement agency?	YesNo	Yes
3	3	Does the PWS management have a mechanism to obtain the most recent information on regulatory requirements?	YesNo	Yes
4	4	Does the PWS management have a mechanism to obtain the most recent information on water system technology and practices?	YesNo	Yes

Management / Operations

1	3	Is there an overall operations and maintenance (O&M) manual for the facility?	YesNo	Yes
2	3	Has a program of written standard operating procedures (SOPs) been implemented at the facility?	YesNoLeadIn	Yes
2.01	3	Are the standard operating procedures utilized and followed by all personnel?	YesNo	Yes
3	3	Are routine operation and maintenance records kept?	YesNo	Yes
4		How often does the governing body review water system data?	DropDown	None

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
5	Has the PWS received assistance from any outside technical assistance providers within the last 24 months? (List organizations and describe nature of assistance)		Header	None
5.01	First organization and assistance provided.		Text	None
5.02	Second organization and assistance provided.		Text	None
5.03	Third organization and assistance provided.		Text	None
5.04	Fourth organization and assistance provided.		Text	None
5.05	Fifth organization and assistance provided.		Text	None

Management / Maintenance

1	3	Is there an established and documented preventative maintenance (PM) program?	YesNo	Yes
2		Does the PM program include the following:	Header	None
2.01	3	Equipment inventory?	YesNo	Yes
2.02	3	Manufacturer's service and repair manuals?	YesNo	Yes
2.03	3	Written PM tasks and schedule based on manufacturers' recommendations?	YesNo	Yes
2.04	3	Records of maintenance performed?	YesNo	Yes
2.05	3	List of technical resources (service providers and equipment / parts suppliers)?	YesNo	Yes
2.06	3	Adequate tools and equipment?	YesNo	Yes
2.07	3	Spare parts inventory?	YesNo	Yes
3	4	Is the PM program managed using computer software?	YesNo	Yes
4	3	Is the PM program effective in maintaining the operability of critical equipment?	YesNo	Yes
5	3	Are there sufficient facilities to store parts inventory, equipment, vehicles, traffic control devices and supplies?	YesNo	Yes

Management / Construction Standards

1	4	Is there a set of construction standards used by the utility?	YesNo	Yes
2	4	Do the construction standards meet the state requirements?	YesNo	Yes
3	4	Are in-house staff and contractors required to use the same standards?	YesNo	Yes

Management / Safety

1	4	Has the utility complied with the safety requirements as prescribed by OSHA?	YesNo	Yes
2	3	Is there a hazard communication program in place?	YesNo	Yes
3	3	Is appropriate Personal Protective Equipment (PPE) provided for each operator?	YesNo	Yes
4	4	Have the operators been trained in safety procedures and equipment?	YesNoLeadin	Yes

4.01 4 If yes, is safety training an on-going and regular program?

YesNo Yes

Management / Financial

General:

1 How often does the governing body review the financial information?

DropDown None

Management / Financial

Capacity:

1 4 Does the PWS use the modified accrual or accrual method of accounting?

YesNo Yes

2 What was the utility's accounts receivable balance at the end of each of the last three fiscal years?

Header None

2.01 1 year ago

Text None

2.02 2 years ago

Text None

2.03 3 years ago

Text None

3 What was the utility's accounts payable balance at the end of each of the last three fiscal years?

Header None

3.01 1 year ago

Text None

3.02 2 years ago

Text None

3.03 3 years ago

Text None

4 4 Does the water system budget provide funding for depreciation of existing plant in service and/or for the funding of reserves for system replacement?

YesNoLeadin Yes

4.01 If yes, which general methodology is used?

DropDown None

5 4 Is the PWS current with the payment of drinking water fees?

YesNo Yes

6 4 Does the PWS use a chart of accounts for its books and records?

YesNo Yes

7 4 If applicable, Is the PWS fund separate from the waste water/sewer utility fund?

YesNo Yes

8 4 Do water system revenues exceed expenditures? Indicate actual

Header Yes

8.01 Previous Fiscal Yr. Revenues

Numeric None

8.02 Previous Fiscal Yr. Expenses

Numeric None

8.03 Previous Fiscal Yr. Balance

Numeric None

8.04 2nd Previous Fiscal Yr. Revenues

Numeric None

8.05 2nd Previous Fiscal Yr. Expenses

Numeric None

8.06 2nd Previous Fiscal Yr. Balance

Numeric None

8.07 3rd Previous Fiscal Yr. Revenues

Numeric None

8.08 3rd Previous Fiscal Yr. Expenses

Numeric None

8.09 3rd Previous Fiscal Yr. Balance

Numeric None

9 4 Are controls established to prevent expenditures from exceeding revenues? If yes, describe in the comments section.

YesNo Yes

10 4 Has an independent financial audit been completed?

YesNoLeadin Yes

QuestionNumber	Sanitary Survey Questions --- ESS Comprehensive		Response Type	Correct Response
10.01	4	If yes, is a copy of the most recent balance sheet for the water system fund available?	YesNo	Yes
11	4	Does the water system include a cash budget within its annual budget for cash flow and purpose?	YesNo	Yes
12	4	Does the water system management review the user fee, user charge, or rate system at least annually?	YesNo	Yes
13		When was the last user fee, user charge, or rate system adjustment?	Date	None
14	4	Does the water system management review financial reports at least monthly?	YesNo	Yes
15	4	Does the PWS provide and use an annual budget?	YesNo	Yes
16	4	Does the PWS provide and use a capital budget?	YesNo	Yes
17	4	Has this PWS produced and does it currently utilize a capital improvements plan?	YesNoLeadIn	Yes
17.01		If yes, when was the capital improvements budget produced?	Date	None
17.02	4	Has the capital improvement budget been updated in the last 18 months?	YesNo	Yes

Management / Financial

O&M:

1	3	Are the financing and budget for O&M satisfactory?	YesNo	Yes
2	4	Are there sufficient funds for staff training?	YesNo	Yes

Management / Staffing

1	4	Is there a formal organizational chart?	YesNo	Yes
2		Does this PWS have a governing body or board of directors?	YesNo	No
3		If no governing body, please indicate who is in responsible charge.	Text	None
4		How often does the board meet?	DropDown	None
5	2	Is the main operator properly certified?	YesNo	Yes
6	2	Is a certified operator available at all times as required by the authority?	YesNo	Yes
7	2	Are there sufficient personnel for operation and maintenance of the water system?	YesNo	Yes
8	2	Is the staff qualified?	YesNo	Yes
9	3	Are personnel adequately trained?	YesNo	Yes
10	3	Do the operators understand the treatment goals for finished water quality?	YesNo	Yes
11	3	Do operating staff have authority to make required operation, maintenance, and/or administrative decisions affecting plant performance and reliability?	YesNo	Yes
12		Does the PWS directly or indirectly employ professional service providers:	Header	None
12.01		Legal Counsel	YesNo	None
12.02		Insurance Professional	YesNo	None
12.03		Professional Engineer	YesNo	None
12.04		Accountant and/or Auditor	YesNo	None